Academic Program and Policies

The Academic Program

Union College offers studies in the humanities, the social sciences, the sciences, and engineering. The curriculum, which has a wide range and balance across areas of study, offers breadth and depth as students explore particular disciplines and interdisciplinary subjects. Union's curriculum and student life are designed to educate students to live and work in a global, diverse, and technologically-complex society.

Union has a tradition of curricular innovation dating back to its founding in 1795. In the 19th century, Union pioneered the introduction of science, modern languages and engineering into the undergraduate curriculum. More recently, the College has made important advances in general education, interdisciplinary study, international programs, and undergraduate research. Our tradition of curricular innovation continues as Union pioneers ways to conceive of engineering as an integral component of the liberal arts and as we introduce students to computational methods, community-based learning, entrepreneurship, and ethical understanding in courses across the curriculum. At Union, we bring together faculty from diverse academic backgrounds so that students can gain mastery of a wide range of disciplines as well as an understanding of how different disciplines approach particular questions. Students thus prepared are ready to communicate, work, and think within and beyond their area of specialty. Many students study abroad as part of their Union education, often in programs led by Union faculty as well as programs of their own design.

A major may be centered in one of the College's academic departments or a student may choose an interdepartmental major involving work in two or more departments, a formal interdisciplinary major, or a personally-designed "organizing theme major" that defines a central, unifying topic cutting across disciplinary lines. Students may also elect to take up to two minors.

The College is committed to ensuring that all students become good writers. The College's program of Writing Across the Curriculum constitutes a systematic way of ensuring that students pay close attention to writing in courses located throughout the curriculum. The First-Year Preceptorial is the foundation of Union's writing requirements. The Sophomore Research Seminar provides a foundation of research skills for upper-class work.

Degree Requirements

Union offers the following undergraduate degrees: Bachelor of Arts, Bachelor of Science, and Bachelor of Science degrees in Biomedical Engineering, Computer Engineering, Electrical Engineering and Mechanical Engineering.

A Union education is a four-year integrated living and learning experience. Our curriculum is designed to enable a student to achieve the breadth and depth that mark the graduate of a liberal arts college. There is a structure in the movement of our curriculum from first to senior year, a structure that ensures the intellectual sophistication and maturity that we want our graduates to have. To qualify for a degree, a student must:

1. Satisfactorily complete 11 terms of study at Union (most students will complete 12), including 36 term courses plus any additional courses taken as electives or to satisfy program requirements. The engineering program requires 40 courses. For two-degree programs refer to the section, "Combined Degree Programs."
2. Satisfactorily complete requirements in the Common Curriculum;
3. Satisfactorily complete requirements in the major field, degree program, or interdepartmental major, including senior capstone requirements such as a senior thesis, as applicable;
4. Attain minimum cumulative indices of 1.80 overall and 2.00 in the major (and 2.0 in the minor if a minor has been declared).

To graduate, a student also must have paid all sums due to the Bursar's Office, must have made satisfactory provision for payment of any other financial obligations assumed while in college, and must have returned all books and materials borrowed from the library. The individual student is solely responsible for assuring that the program

presented for graduation fulfills all requirements, both in general and in specialized study. The Office of the Registrar should be consulted when questions arise about the satisfaction of graduation requirements. Notice of intent to graduate must be provided to the Registrar as per the deadline specified by the Registrar's Office.

Academic Calendar

Union divides the academic year into three terms of 10 weeks plus a week of exams.

Enrollment Requirements

A full course unit may be equated to five quarter-credit hours, or three and one-third semester credit hours. The normal course load for a full-time student is three courses in each of the three terms, or nine courses a year. Taking laboratory and other extra class hours into account, the average time per week spent in class is approximately 4.5 hours and the expected average time spent outside of class on course work is approximately 10.5 hours per week. To complete the entire curriculum in four years, engineering students should expect, on occasion, to take more than three courses per term, once per academic year. For additional information on course registration policies, refer to "Academic Program and Policies."

Normally, students will be enrolled full-time for 12 terms (at least 36 courses) through the spring term prior to graduation, except in the two circumstances noted below.

- Students that accumulate three or more credits from pre-matriculation credits or Union College fourth courses, practicum credit, summer courses, or mini-terms may graduate one term early or be unenrolled from Union for a term during the junior or senior year, provided that these credits have not been used to compensate for deficiencies incurred during their time at the College. Students cannot utilize transfer course credit earned at other colleges or universities after matriculation at Union College to graduate early.
- Students in the Union Scholars and Seward Interdisciplinary Fellows programs may use any additional course credits they earn at Union to accelerate their graduation or to be unenrolled for a term or more.

Any student seeking early graduation must obtain approval from the Office of the Registrar. Students seeking to be unenrolled for a term must inform the Office of the Dean of Students. For guidelines regarding transfer credits, refer to Transfer Credit Policy.

The Common Curriculum (General Education)

For a transition period Union will have two general education curricula: (1) students who entered Union before the fall of 2022, or who transfer into a class that began before this date, will participate in the "Common Curriculum", (2) students in the class of 2026 who enter Union in the fall of 2022 as well as students in subsequent classes will participate in the "Complex Questions" curriculum.

The Common Curriculum

As a liberal arts college, Union is devoted to educating students to flourish in this rapidly changing world, a world with fluid geographic, intellectual and cultural boundaries. The Common Curriculum seeks to nurture in students a commitment to learning as central to one's development over the course of a lifetime. Union starts with the assumption that college represents a beginning and not an end of one's education. Union's approach, ensuring that students learn much of what the College deems important and at the same time develop and satisfy a taste for exploration, combines elements of choice within a structure of requirements.

Union's Common Curriculum ensures that students analyze and integrate knowledge from a wide variety of areas, communicate the results of their learning and, most important, continue to learn, an essential skill in today's world. To accomplish this, we start with a First-year Preceptorial that emphasizes critical reading and writing using the perspectives of multiple disciplines, and a Sophomore Research Seminar that focuses on learning research skills necessary to assess through informed reflection the enormous varieties of information to which we have access today. Union's Common Curriculum provides the foundational breadth that defines a liberal arts education through

requirements in humanities, social sciences, linguistic and cultural competency, quantitative reasoning, and science and technology. The Common Curriculum is designed to enable students to become life-long learners by learning to analyze, synthesize, integrate, and communicate effectively, and obtain an appreciation of different disciplines and areas of knowledge, as well as interdisciplinary study.

A detailed description of the Common Curriculum is under "Common Curriculum."

Complex Questions: Global Challenges & Social Justice Curriculum

Union recognizes that students live in a world full of global challenges, including in particular social justice. Though the breadth of offerings made available, the Complex Questions curriculum will make each student's journey unique. The one constant of this curriculum is to provide the tools and context necessary to help our students drive meaningful change in the world.

The Complex Questions curriculum at Union College combines the breadth and strengths of a traditional liberal arts education to enhance teaching and learning through the diverse perspectives of major areas of human understanding. Driven by our longstanding college-wide commitment to lifelong learning with social purpose, the curriculum creates opportunities for students to engage with and develop an understanding of the complexity and global nature of many issues and how different disciplinary perspectives address and elucidate those issues.

In addition to a first year inquiry course, students will take eight Complex Questions: Global Challenges and Social Justice Perspective courses over the course of their four years at Union. * One of the most distinctive elements of the curriculum is its interdisciplinary approach. Through the curriculum, every student will be exposed to at least one course in each of the following academic Perspective - delivered within a real-world context:

Creative Works/Arts and Design

Cultural and Historical Foundations

Data and Quantitative Reasoning

Engineering, Technology and Society

Literatures

Natural and Physical Sciences

Social Analysis, Politics and Ethics

World Languages

By pursuing coursework in each of these Perspectives related to a global challenge or the issues of justice, equity, identity, and/or difference, Union students develop a deeper understanding of the dynamics at play in these issues that is necessary to help them drive meaningful change in the world. Beyond that, through the Complex Questions: Global Challenges and Social Justice curriculum, Union students receive the type of broad exposure to multiple academic Perspectives that is likely to encourage them to fully explore their educational interest - including areas they may not have considered prior to coming to college. This is consistent with Union's long history of encouraging students to combine their academic interests as broadly as possible.

A detailed description of the Complex Questions Curriculum is under Complex Questions: Global Challenges & Social Justice Curriculum

* As the Complex Questions Curriculum is phased in, students entering in the Fall of 2022 and 2023, will only be required to take six Perspectives courses and students entering in the Fall of 2024 will only be required to take seven Perspective courses.. However Union College strongly recommends that students take courses in all eight Perspectives.

The Major

The major should be viewed as a coherent series of courses providing a solid background in the area of study as well as an introduction to advanced study. Depth of knowledge and understanding in a particular field of study is provided by the major. Courses in this area of special study may also count toward meeting some Common Curriculum requirements, but the prescribed program of study for a major is primarily intended to develop competence in the scholarship represented by an academic department or a group of departments. In addition to majors offered through academic departments, Union offers majors in interdisciplinary programs and individually designed "organizing theme" majors.

Students can pursue an interdepartmental major that combines study in two departments or interdisciplinary programs that offer an interdepartmental major (ID) by completing the ID requirements specified by each. Students must review particular department and interdisciplinary program terms and conditions for interdepartmental majors and then consult with the necessary Chairs and Directors in order to carry out an ID. Departments and interdisciplinary programs specify the terms and conditions for interdepartmental majors. Students should consult each department or program section in Majors, Minors, and Other Programs for descriptions of available options and requirements. Biomedical Engineering, Computer Engineering, Electrical Engineering, and Mechanical Engineering may not be used as a component of interdepartmental majors. Senior Writing Experience requirements vary among areas of study. Where appropriate, students can do one two-term thesis to satisfy both departments' writing requirements.

Students may pursue a "double major" by satisfying all requirements of two majors, neither of which can be an interdepartmental major or an organizing theme major. Students may not pursue more than two majors. Except as indicated under "Combined Degree Programs," a student satisfactorily completing two majors earns one rather than two degrees. A student in such a program will be eligible for his or her degree whenever the requirements for both majors, along with those in the Common Curriculum program, are satisfied and a minimum of thirty-six course credits has been earned. Please see below for how overlapping courses may be counted toward both majors.

The student who enters college with a fairly firm notion about a proposed field of concentration will find it advantageous to test his or her interest in the proposed major field during the first year. In many programs, a student need not begin a major during the first year in order to complete that major by the end of the fourth year. In engineering and science, however, it can be extremely difficult to complete a major in four years unless course sequences are begun in the first year. Students in pre-medicine also need to consider taking the requisite courses in their first year. At the end of the first year, the major may be declared or changed without penalty in the form of lost time and credit. Soon thereafter, and certainly by the end of the second year, the student should make a serious commitment to a focus of study. Every student is required to file with the Registrar a declaration of major no later than the mid-point of the spring term of the sophomore year ("Liberal Arts" and unspecified "Engineering" are not considered majors). Students majoring in an unspecified engineering program must declare their major by the end of their first year of study. This decision may be altered subsequently, although late change of major may require extra courses or terms. Requirements for majors appear at the head of each departmental listing. Some areas require additional courses from related disciplines.

Students may change their major program upon application to the Registrar. The change must have the consent of the Department Chair or Program Director. A request for a change of major submitted after the first week of the final term of study at the College may not be possible to accommodate without delaying the student's graduation.

The Minor

Students who wish to pursue a secondary field of concentration may select and declare up to two academic minors. A minor normally consists of six courses. Requirements for the minor may be found in the course listings by department and program. Students are normally expected to declare a minor in the sophomore or junior year. They must obtain the approval of the department chairperson or program director.

A minimum cumulative index (GPA) of 2.00 must be attained in courses used to satisfy the minor requirement. All students are responsible for verifying the accuracy of their declared minor at the time of their senior year audit review.

Minors cannot be added once the degree has been conferred. Please see below for how overlapping courses may be counted across major and minor combinations.

Overlapping courses across Majors and Minors

Students may pursue a combination of majors and/or minors by satisfying all of the requirements for each major or minor individually. Courses may be "double-counted," but the
total number of courses for any major/minor combination must normally be at least the lesser of 1) the sum of the required number of courses for each major/minor and 2) the number in the table below. (Exceptions require approval from all relevant department chairs / program directors and the Dean of Studies.) The "required number of courses" includes courses both inside and outside the department/program.

Major/minor Combination	**Number of distinct courses**
One major, one minor	18
One major, two minors	23
Two majors, no minor	21
Two majors, one minor	27
Two majors, two minors	33
One ID major, one minor	22
One ID major, two minors	27

Note that some major/minor combinations are not permitted; see each program section in the academic catalog for details.

Combined Degree Programs

Union College offers programs in which a student may earn two baccalaureate degrees in the following combinations: engineering and bachelor of science or bachelor of arts, or two engineering degrees.

Nine courses beyond the requirements for the professional degree are required, and normally five years are required to complete them. Certain combinations of curricula within five-year programs may involve carrying an occasional course overload. If a student cannot fulfill all requirements for the two degrees, modification of the program is permitted only with the concurrence of the department.

Also offered are two-degree programs in cooperation with other area colleges, leading to a bachelor of arts or bachelor of science degree from Union and a law degree from Albany Law School; or to a bachelor of science degree from Union, an M.S. or M.B.A. degree from Clarkson University - Capital Region Center, and an M.D. from Albany Medical College; to a bachelor of arts or bachelor of science and a master of business administration in healthcare management. For more information on two-degree programs, please refer to the following sections under Majors, Minors, and Other Programs:

3+3 Accelerated Law Program (6-year program)
Leadership in Medicine/Healthcare Program (8-year program)
Master of Business Administration in Healthcare Management Programs (5-year program)

International Programs

The College considers its commitment to international programs to be a central part of its identity. In addition to broadening perspective and deepening knowledge, study abroad often energizes and challenges students so that they are motivated to a higher level of commitment to the enterprise of learning. Students studying away from Union do so through Union College terms abroad programs and exchanges. Students may apply for "non-Union" programs through Union's International Programs office to study abroad on programs run by other colleges and universities. Independent Study Abroad programs allow students the opportunity to design their own study abroad experience. Mini-term programs are offered over winter and summer breaks as well. Refer to "**International Programs**" under Majors, Minors, and Other Programs for more information, including eligibility criteria, application procedures and withdrawal policies.

Academic Policies

Registration for Courses

Registration Confirmation: Each term the Registrar conducts online prescheduling for continuing students who, with the help of their advisors, select three courses for the coming term. Prescheduling must be completed during the announced periods. Students who do not intend to preschedule should notify the Dean of Students of their intended withdrawal from the College. After prescheduling, a request for a change of course ordinarily must be filed with the Registrar no later than the fifth academic day of the term; such changes should be recommended by the advisor. Students who fail to finalize their course schedule after the end of the first week of the term will be assessed a late charge on their bill. With written permission from the instructor, a student may enter a course as late as the second week of the term. Students not enrolled in courses by the end of the second week of classes may be subject to withdrawal from the College for the term and will have to reapply for admission to the Dean of Students.

All full-time matriculated students are expected to be enrolled in no fewer than three courses at the start of each term, unless an exception is approved by the Dean of Studies. **This does not include practicum courses**. For withdrawals after the start of the term, please refer to the section "Withdrawal from Courses." All regular undergraduate students are charged each term's full tuition, which covers enrollment in three courses during that term. Tuition is not prorated until after the student has been in attendance for 12 full terms (or, for five-year programs, 15 terms).

Students must attend those sections of courses to which they have been scheduled by the Registrar. A change of section should be made with the Registrar's Office provided that seats are available or permission is obtained from the professor.

Fourth Courses

Students are allowed to enroll in one fourth course in each academic year at no charge, provided they have a cumulative grade point average (GPA) of at least 3.30, are making satisfactory progress in their program of study, and are not behind in credits. Students who are behind in credits due to course withdrawals or course failures - after taking into account any pre-or post-matriculation transfer credits and credits from Union College practicums, fourth courses, summer courses, and mini-terms- may take up to two fourth courses at no extra charge. These policies apply to all students, including engineering majors, who, in addition, are required to take 40 classes for their degree and are therefore permitted to register for four fourth courses at no additional charge, normally one fourth course per academic year. In all other circumstances, registration for a fourth course incurs an additional fee. Refer to Costs and Financial Aid for the relevant fee. Refer to "Special Curricular Opportunities" for information regarding extra courses for Union Scholars and Seward Fellows. Registration in a fourth course is not available to students in their first term of study at Union. Students who have below a 2.5 GPA or wish to register for their second or third overload course of the academic year, require approval from the Dean of Studies to enroll in a fourth course.

With the exception of students in the Scholars and Leadership in Medicine programs as well as first-and second-year engineering majors, all students, are required to complete and submit the "Petition to Enroll in a Fourth Course" form at the time of registration.

Practicum: An enrollment in a zero-credit practicum does not count as one of a student's three regular course registrations for the term (see above: Registration Confirmation). After successfully completing a practicum sequence, a student may request that one course equivalent be recorded. An aggregated practicum course credit of this sort typically requires registration in a zero-credit practicum in each of three separate terms; requirements specific to each practicum sequence should be confirmed in the Academic Catalog entry for the practicum. Accumulated practicum course credit may be counted toward no more than two of the thirty-six course credits required for graduation, though all practicum registrations will be recorded on a student's record, and may be used to satisfy program requirements if allowed by a student's major or minor.

Auditing Courses: A matriculated full-time student in good standing may audit a course if the instructor gives permission. An audit is recorded with a corresponding audit notation on the student's transcript.

Pass-Fail Option

In order to encourage students to explore the curriculum, students may take up to four electives to be recorded as "pass" or "fail."

1. No course registered as "pass/fail" may be used in fulfilling a requirement for the major, for a minor, for the Common Curriculum (General Education) or Writing Across the Curriculum, or for a term abroad.
2. The "pass/fail" option is not open to students in their first two terms.
3. A student may take no more than one "pass/fail" course per academic year (defined as the fall, winter, and spring) in the first three years.
4. A student may take up to two "pass/fail" courses in the senior year (defined as the fall, winter, and spring), but may register for no more than one "pass/fail" course per academic term.
5. A student may register for no more than one of the four "pass/fail" courses in any academic department and no more than two of the four "pass/fail" courses in any academic division (Refer to "Divisions" under Common Curriculum.
6. Independent study courses and those taken on a Term Abroad, may not be taken Pass/Fail.
7. A grade of "pass" will be equivalent to the lowest passing grade or better.

A grade of "pass" will not be calculated in the term or cumulative index (GPA); a grade of "fail," however, will count as any other failing grade. A course is registered as "pass/fail" by means of a form provided by the Registrar and the option must be exercised (or revoked) no later than the end of the third week of the term. The instructors (who will be informed of this choice by a particular student only by request) will submit regular letter grades, which will be appropriately converted to "pass" or "fail." Later reconversion to the letter grade will be done only if required by a student's official change of major or minor and only upon the specific request of the student.

Students who plan to pursue studies in Graduate or Professional schools should discuss with their advisors the effect of "pass/fail" grades on admission to such programs. Some graduate schools regard a grade of "pass" as a weak grade.

Attendance

Class Attendance: The College expects students to attend classes and laboratories regularly, but it leaves to each instructor his or her statement of policy with respect to absence. It is the student's responsibility to be aware of the policy and to inform instructors in advance of unavoidable absences. An instructor may lower a grade or assign a failing grade for excessive absence.

Completion of Courses

Withdrawal from Courses:

With proper notice to the Office of the Registrar, a student may drop a course during the first eight weeks of a term after consulting with his or her advisor and getting that advisor's approval. Withdrawal from FYI-100, FYI-100H, or SCH-150 requires the approval of the Dean of Studies. Withdrawal from SRS-200 requires the approval of the Director of General Education.

During the first two weeks of the term, a student must add a class to replace the dropped class; exceptions to this policy must be approved by the Dean of Studies. After the end of the second week of classes and until the end of the eighth week, a grade of "W" will be assigned for dropped classes. Dropping a course after the end of the eighth week will result in a grade of "F" unless there are extraordinary circumstances beyond the student's control that prevented him or her from completing the course. The Dean of Studies must approve the withdrawal. In such a case the grade shall be "WP" or "WF," depending on whether the student was passing or failing at the time the course was dropped. A "Failure" ("F") shall be posted to a student's record if proper notice of withdrawal from a course is not given to the Registrar. For information on how this would affect tuition, please see "Withdrawal Deadlines, Refunds and Obligations" in the "Costs" section. Students receiving financial aid who elect or are permitted to drop a course may be ineligible for such aid in subsequent terms. See the chapter on "Costs and Financial Aid" for details.

Three Final Exam Advisory: Students with three final exams scheduled for the same day should speak with their professors to make arrangements to reschedule one of the exams. If arrangements cannot be made with individual faculty members, the student should consult with the Dean of Studies.

Absence from Final Examinations: Students are required to appear for scheduled final examinations. Absence from a final examination produces an automatic grade of "Failure" on the exam. In cases of a student's absence caused by verified personal misfortune, the Dean of Studies may allow a grade of "Incomplete," and the student must arrange with the instructor to take a makeup examination not later than two weeks after the last day of the examination period of the term in which the "Incomplete" was given.

Incomplete Course Work: Students must submit all course work no later than the closing hour of the last scheduled final examination period of each term, unless the instructor has set an earlier deadline. Graduating seniors cannot be issued a grade of "Incomplete." A grade of "Incomplete" may be assigned only for extraordinary circumstances beyond the student's control. The instructor must complete the incomplete form provided by the Registrar's Office and obtain the student's signature. An incomplete grade form must be submitted to the Registrar's Office after submitting the final grades online. When an "Incomplete" is granted, the course work must be completed no later than two weeks after the last day of the examination period of the term in which the "Incomplete" was given. Course work not completed within the allotted period of time will be assigned a failing grade unless the Dean of Studies, in consultation with the instructor, grants an extension of the incomplete.

Course Repeat Policy: Students who repeat a course that they previously failed will have both grades listed on their transcripts. All credits attempted and total quality points earned will be used in calculating the cumulative grade point average. Students who repeat a course that they have previously passed (grade of "D" or better) will have both grades listed on their transcripts and the quality points and the credit for the second (or last) attempt will be factored into the cumulative grade point average.

Making up Credits: There are many options for students to get caught up if they are behind in credits due to course withdrawals or course failures. Students can take a fourth course at Union, a summer course at Union, an internship or independent study over the summer for a full course credit, or a pre-approved summer course at another College (a maximum of three course credits can be earned at schools other than Union after matriculation to make up for credit deficiencies resulting from course withdrawals or course failures). Students can also go on a mini-term, or earn a practicum credit by taking three terms of the same practicum with a passing grade. For more information, as well as the costs and procedures associated with each option, please click here.

Withdrawal from College: Withdrawal from the College at any time is considered official only when following the College's leave policy with communication through the Class Deans office. The withdrawal date is considered the date on which written notification is received. Notification to another office or person, failure to preschedule or confirm registration, nonpayment of the term bill, or a request for a transcript are not considered notice of withdrawal. A student

who wishes to withdraw permanently or take a voluntary leave of absence should submit the online leave request form or notify their Class Dean as far in advance as possible to avoid or reduce financial penalties.

Suspension: Students cannot transfer credits to Union for courses taken at other institutions while under suspension from Union College. This applies to both academic and social suspension.

Readmission: All applications for readmission or return from absence must be submitted online or through written communication to the Class Deans office. Readmission becomes official only if or when the admission and security deposit is on hand or has again been paid and the student has received official clearance to return from the Class Deans office.

Academic Standing

Academic Ratings: Instructors submit grades at the end of each term. A report of a student's term grades is available by logging into self service. Grade reports will only be mailed to the parent or guardian if the student requests one in writing at the Office of the Registrar. No other grade notices will be mailed to the student's home address. The grades of scholarship and their associated quality points are A (4.0), A- (3.7), B+ (3.3), B (3.0), B- (2.7), C+ (2.3), C (2.0), C- (1.7), D (1.0), P (pass), and F (failure). A course in which a student receives the grade of "F" does not count toward graduation. If the course is required to complete a sequence in the major or otherwise required for graduation, a student must repeat this course and obtain a satisfactory mark. Some courses do not carry graduation credit and a few earn double credit.

Academic Good Standing: Union College regards a student to be "in good standing" academically if the student is permitted to enroll for a subsequent term. To graduate, a student must present an overall cumulative grade point index (GPA) of at least 1.80 and an index of at least 2.00 in the major.

The Subcouncil on the Academic Standing of Students will review the status of any student whose cumulative grade point index (GPA) or immediate prior term grade point index (GPA) falls below 2.00 or of any student for whom other considerations, particularly standing in the major, suggest questions of satisfactory progress toward graduation. If, after such a review, it is felt warranted, the Sub council may adopt one of the following actions:

Academic Warning: The student may remain in college, but unless the GPA improves, he or she will be subject to subsequent action. (This action is the minimum that will occur if either the cumulative grade point index (GPA) or the prior term grade point index (GPA) is below 2.00).

Special Academic Warning: Normally, the student must achieve a 2.00 or better GPA in the next term to remain in college. To be removed from Special Academic Warning, the student must achieve two consecutive terms with a GPA of 2.00 or higher while carrying a full course load, with at least two graded courses in both terms. If the student's cumulative index (GPA) is still below 2.00, he or she remains on special academic warning.

Suspension: An exceptionally weak record in a single term or a failure to improve after warning may result in suspension when, in the judgment of the Subcouncil on the Academic Standing of Students, a student's record makes it inadvisable to continue in college. The Subcouncil may recommend a one- or two- term suspension.

Dismissal: In certain cases, the Subcouncil may dismiss a student permanently.

Requests for reconsideration of the Subcouncil's decisions must be submitted in writing to the Subcouncil through the Office of the Dean of Studies. Reconsideration will occur only when information not previously available to the Subcouncil is submitted and, in the judgment of the Subcouncil, could have affected its decision. Such reconsideration in no way implies that the Subcouncil will subsequently reverse its original decision. Appeals (as opposed to requests for reconsideration) should be directed to the Dean of the Faculty. Such appeals will be considered only with respect to procedural issues.

Academic Honesty

The College does not tolerate dishonest academic behavior. Any academic work that students represent as their own must be their own. Students must take responsibility to seek advice from faculty members and academic deans if they have questions about what constitutes academic honesty. Students must not resort to plagiarism, theft and mutilation of library books and periodicals, or any other form of academic dishonesty. Any student found guilty of academic dishonesty will be subject to disciplinary action. Procedures regarding charges of academic dishonesty are described in the Faculty Manual. Additional information can be found at: Union College Academic Honor Code and Union College Statement on Plagiarism

Transfer Credit Policy

Matriculated Students (Transfer students see "Transfer Students Only" section below)

Credits received prior to matriculation at Union College, including Advanced Placement and International Baccalaureate courses

A matriculating first-year student can transfer in a maximum of six course credits to use towards graduation credit requirements through any combination of Advanced Placement (AP) examinations, the International Baccalaureate Program (IB), or college courses taken at other post-secondary institutions. Credit can be granted for similar high-level examinations from other countries, such as A-level examinations or IGCSEs, in consultation with academic departments (references to AP and IB examinations below should be understood to apply to approved examinations from other countries as well.) Students must elect a more advanced course if they study in a department in which credit has been granted. Repetition of work for which credit has been granted will not be permitted. Please refer to department and program pages for specific guidelines.

Students with AP examination scores of three or higher in calculus and four or five in other subject areas may be eligible to receive college course credit. Credit for IB courses may be awarded for higher-level examination scores of six or better; economics will accept a score of five at the higher level. Aside from AP and IB courses, Union College will consider granting credit for a course taken while the student is enrolled in high school only if the course is taken on the campus of the college or university offering the course, the course is available for enrollment by the students of that college or university, and the final grade is a C or better. Online courses are eligible for credit pending approval from the corresponding academic department chair(s) and the Dean of Studies.

Any number of AP, IB or college courses may be used to determine course placement with the approval of the appropriate department chair in each instance.

Credits received at other institutions after matriculation at Union College

Matriculated students may transfer in up to three courses taken elsewhere (transfer students who entered with more than 15 credits should consult the "Transfer Students Only" section of the Transfer Credit Policy in the Academic Catalog for the number of courses that can be taken elsewhere.)

Students who are not behind in credits may wish to enhance their education by taking courses at other colleges, particularly during the summer. Although credit towards the courses required for graduation will not be granted in such circumstances, up to three such courses may be used with the permission of the appropriate department chair(s) and the Dean of Studies to fulfill particular course requirements and to satisfy course prerequisites. Such permission must be obtained in writing and filed with the Registrar's office in advance of taking such courses.

Permission is granted for courses to count towards the total number of courses required for graduation only when a student has failed or withdrawn from courses started at Union and as a result is behind in credits after taking into account any "extra" credits such as pre- or post-matriculation transfer credits and credits from practicum, fourth, or summer courses at Union, or Union mini-terms.

Students behind in credits who wish to receive credit for courses taken at other colleges must have those courses approved by the appropriate department chair(s) and by the Dean of Studies. A form for this purpose is available at the

Office of the Registrar's forms and guidelines webpage and should be submitted to request approval in advance of taking the relevant courses.

Courses for transfer must be taken at an accredited institution of higher education. Course work at other colleges will be recognized only if a minimum grade of "C" is achieved (pass/fail grades are not allowed.) The credit value of a course must be at least three semester-hour credits or five quarter-hour credits to earn one full course credit at Union. The course must entail a minimum of 32.5 contact hours to be approved for transfer.

Online courses are eligible for transfer credit pending pre-approval from the corresponding academic department chair(s) and the Dean of Studies. Online courses that are self-paced or completely asynchronous are generally not eligible for transfer credit; department chairs do have the discretion to make exceptions. When taking an online course for transfer credit, students must not overlap with the fall, winter, or spring terms, unless given by prior approval by the Dean of Studies. Eligible online courses must be provided by a regionally accredited college or university and count towards an undergraduate degree at that institution. Therefore, MOOCs (massive open online courses) and other courses that do not offer credit or have an optional credit system (like those from edX, Coursera, Udacity, etc.) are not considered for transfer credit. Transfer credit is typically not granted for online coursework completed before the spring of 2020.

Students with 18 or more credits towards graduation may receive degree credit for courses taken at a two-year college only if approved by the Dean of Studies. The grades for course work accepted from other colleges will not be recorded on a student's Union College transcript nor will these grades be factored into a student's cumulative academic average.

Students who must miss a term due to substantial medical or personal hardship can, with documentation, request permission through their Class Dean and the Dean of Studies Office to transfer in up to three non-term abroad credits from an outside institution. Students in such hardship situations may only be allowed to complete the equivalent of one Union course credit per academic session depending on the circumstances. Pre-approval will be required, and decisions will be made on a case-by-case basis.

Selected graduate courses at Clarkson University - Capital Region Center are open to advanced undergraduates with the approval of the student's advisor. Students matriculated in a five year combined degree program may take up to three graduate level courses as an undergraduate. All other students will be limited to two graduate courses. The first two graduate courses (or three for matriculated combined degree students) that a student takes automatically count towards this limit. No substitutions may be made at a later date. For a list of eligible courses, please refer to the Clarkson University - Capital Region Center's Supplemental Listing, which is available on the Registrar's Office "Course and Exam Schedule" website during prescheduling. If the graduate course is cross-listed with an undergraduate course, Union students must enroll in the undergraduate course. For course descriptions, please consult the course catalog of Clarkson University - Capital Region Center.

For cross-registration at participating colleges of the Hudson-Mohawk consortium, please refer to the relevant heading in this catalog under the "Special Curricular Opportunities" section for rules and restrictions. Students with 18 or more credits toward graduation may not cross-register for courses at a two-year college unless specifically approved by the Dean of Studies.

Transfer Students Only

Transfer students may bring in up to two full years of college course credit and must complete two years of study at Union to qualify for a Union degree. At most, six of these transfer course credits can come from any combination of Advanced Placement (AP) examinations or the International Baccalaureate Program (IB). Refer to the catalog entry on Transfer Credit Policy for Matriculated Students for required courses for AP and IB courses. Characteristics of courses for transfer credit must meet the requirements for transfer credit for all students at Union, including a minimum grade of C, credit for online courses is not given, and courses must have three semester credit hours or five quarter credit hours. Courses without Union equivalents can be transferred at the discretion of the Dean of Studies.

Students who are awarded 15 credits or fewer may, after matriculating at Union, transfer in three additional course credits for courses taken at other institutions to make up for deficiencies: courses for which the student received a grade lower than "C" before matriculation, course withdrawals or failed courses at Union, or pre-matriculation courses that

did not transfer because they were not equivalent to a Union course. Students who are awarded 16 credits may transfer in up to two additional credits to make up for deficiencies; those with 17 credits may transfer in one additional credit from another institution to make up for a deficiency. Prior approval for all transfer credits must be obtained from the appropriate department chair and the Dean of Studies. Permission is normally granted only if the student is to make up for a deficiency (as described above or to fulfill Common Curriculum (General Education) or departmental requirements. If the student is not making up for a deficiency transfer credits cannot count toward the total number of credits required for graduation or towards accelerated graduation. Please note: Online courses are eligible for transfer credit pending approval from the corresponding academic department chair(s) and the Dean of Studies.

Proficiency Examinations

With the approval of the relevant department and notification to the Registrar, proficiency examinations covering the substance of courses listed in this Academic Catalog, except independent study, may be taken by matriculated undergraduate students in good standing at a cost of $250 for each examination. Credit may be obtained from proficiency examinations to allow for placement out of certain courses, but cannot be used toward accelerated graduation.

Any proficiency examination may be taken only once. It will be graded "pass" or "fail," but failures will not be recorded. In the Department of Modern Languages, credit may normally be earned by proficiency examination only for courses in literature and civilization numbered 300 and above. Students may not take proficiency examinations in subjects in which they have already taken courses at a higher level for credit.

Participation in Graduation

All students who start with a class may march with that class at Commencement, subject to the following conditions:
- They must be in good academic standing*;
- They must be enrolled at Union for at least one of the three terms of the year in which they are marching; and,
- There exists a path to completion of degree requirements by the end of the summer and/or fall term following the June Commencement.

In circumstances falling outside of these parameters, students can request an exception from the Dean of Studies. Diplomas will be mailed to students that have completed all degree requirements 6 to 8 weeks after Commencement. Any student who has not completed degree requirements will need to follow up with the registrar's office regarding outstanding coursework and requirements. Once the student has completed all program, degree and College requirements, the Registrar's Office will confer the degree at the next conferral date, and a diploma will be mailed.

If a student faces an unresolved charge pertaining to the honor code or conduct code, that student may be denied the opportunity to participate in the Commencement ceremony.

Academic Honors and Recognition

Dean's List: A student achieves Dean's List standing for an academic year, which is defined as the fall, winter, and spring term, by meeting the following requirements:

1. An academic index (GPA) of at least 3.50 for the year.
2. Students with first year, sophomore or junior status at the end of the academic year must have a total of nine completed courses, at least eight of which are graded. Students with senior status at the end of the academic year must have completed eight courses, at least seven of which are graded. For seniors graduating early, this rule will be applied to their last three terms at Union College.
3. No grades of "D" or "WF" or "F."

A student who spends part of an academic year at the College may be admitted to the Dean's List by the Dean of Studies if extraordinary circumstances prevent full-time attendance and the academic index (GPA) for the courses taken is at least 3.50 with no grades of D or F.

Graduation with Distinction: Union College recognizes academic distinction by awarding some degrees summa cum laude, magna cum laude, and cum laude. These Latin honors signify various levels of the graduates' cumulative grade point averages. The faculty has the responsibility and authority for setting the levels necessary to attain the various honors. Standards are summa cum laude (3.80 or better), magna cum laude (3.65 or better), and cum laude (3.50 or better). To be eligible, students must have taken at least eighteen courses toward their undergraduate degree while enrolled at Union.

Departmental Honors: In general, students become eligible for departmental honors provided that they (1) have achieved a cumulative index (GPA) of 3.3 or better; (2) have an index (GPA) of 3.3 or better in courses taken in the major with grades of A- or better in at least three such courses, exclusive of the senior thesis; (3) completed their Senior Writing Experience on which a grade not lower than A- has been earned (4) satisfy any other requirements set by the major department, and (5) have taken the final six terms of their program at Union or elsewhere in a study program approved by Union. Students should consult their departments for complete information. In the case of interdepartmental majors, students must satisfy the above for each department, except that for (2), they need to have at least two (not three) grades of A- or better in each department. Interdepartmental majors also must complete independent work of substance and distinction, in the form of a thesis or some other written or documented work on which a grade not lower than A- has been earned, and they must be nominated by both of the major departments. Leadership in Medicine students and double majors may earn departmental honors by fulfilling the requirements listed above in at least one of their majors.

Academic Honor Societies

Alpha Kappa Delta: Omega chapter of New York of Alpha Kappa Delta, the national honor society of sociology, was established at Union in 1979. Juniors and seniors who have done outstanding work in sociology are eligible.

Eta Kappa Nu: Phi chapter of the national honor society of Eta Kappa Nu for electrical engineers was established at Union in 1926. Students of outstanding academic achievement who show admirable qualities of character are invited to become members during their junior and senior years

Eta Sigma Phi: Eta Phi chapter of Eta Sigma Phi, the national honor society for Classics, was established at Union in 2005. Students who demonstrate high achievement in the study of Greek or Latin are eligible for election to full membership.

Nu Rho Psi: Alpha chapter in New York, the national honor society for Neuroscience, was founded in 2006 under the auspice of the Faculty for Undergraduate Neuroscience and through the joint efforts of faculty and students at Baldwin-Wallace College, Baylor University and Johns Hopkins University.

Omicron Delta Epsilon: Alpha Beta chapter of New York of Omicron Delta Epsilon, the international honor society in economics, was established at Union in 1973. Juniors and seniors who have shown outstanding achievement in the study of economics are invited to become members.

Phi Alpha Theta: Alpha Iota Chi chapter of Phi Alpha Theta, the national honor society for history, was established at Union in 2001. Students who have compiled outstanding academic records in history are eligible.

Phi Beta Kappa: Juniors and seniors of academic distinction who are candidates for the B.A. or general B.S. degree are eligible for membership in Phi Beta Kappa. Election is based on scholarship and character, with particular attention given to intellectual maturity and breadth. Union's Phi Beta Kappa chapter. Alpha of New York, was established in 1817 and is the fifth oldest in the country. Election to membership is one of the highest distinctions to be gained by academic achievement.

Pi Mu Epsilon: Alpha Tau chapter in New York, a national undergraduate honors society in mathematics, was established at Union in 2013. Students who have compiled outstanding records in mathematics and who work to promote mathematics are eligible to apply for membership.

Pi Sigma Alpha: The Union chapter of Pi Sigma Alpha, the national honor society in political science, was established in 1974. Students who have compiled outstanding academic records in political science are eligible.

Pi Tau Sigma: Established in 1915, Pi Tau Sigma is the national honorary mechanical engineering fraternity. Juniors and seniors with high academic achievement and character are eligible.

Psi Chi: Psi Chi is the national honor society founded to encourage, stimulate, and maintain scholarship in and advance the science of psychology.

Sigma Delta Pi: Established at Union in 1993, the Tau Mu chapter of Sigma Delta Pi honors juniors and seniors for outstanding achievement in the study of Spanish language and literature.

Sigma Pi Sigma: Founded in 1975, the Union chapter of the national honor society Sigma Pi Sigma recognizes outstanding scholarship in physics.

Sigma Tau Delta: Established at Union in 2009, Sigma Tau Delta is the international English honor society.

Sigma Xi: The Society of Sigma Xi is an honorary organization dedicated to the encouragement of scientific research pure and applied. The Union chapter, the third in the nation, was begun in 1887. Annually, the society elects to associate membership selected students in science or engineering who have demonstrated, usually by a written report, marked aptitude for scientific research. In addition, students and faculty who have demonstrated noteworthy research achievement may be elected.

Tau Beta Pi: Established at Union in 1964, Tau Beta Pi annually elects as members a rigorously-selected group of juniors and seniors who have achieved outstanding records in engineering studies and have demonstrated excellence of character.

College Policy Resources

The Student Handbook and the Faculty Manual are resources, available on the College's web site, that outline College policies, including those regarding academic dishonesty, intellectual property, grades, and use of computing resources.

Students' Rights and Confidentiality of Student Records (FERPA)

One of the goals of a Union College education is to enable students to gain the maturity, independence, and confidence to function as responsible adults. According to New York State law, students who have reached the age of 18 are considered to be adults and are accorded the full rights that such status entails. Because of this, it is the policy of Union College to communicate directly with students on all academic matters, such as grades, academic standing and issues of credit.

The 1974 Family Educational Rights and Privacy Act (FERPA) stipulates that in the case of students who are dependents of their parents in the eyes of the Internal Revenue Service, the College is allowed to disclose information from the student's educational records without obtaining the student's consent. It is the policy of the College to notify both students and parents in writing of formal academic warnings, probationary status and dismissal. Additionally, the College will notify the parents of a student in connection with a health or safety emergency as expressly permitted under FERPA.

In other communications with parents, the College will normally respect the privacy of the student. Information from the student's educational records will not be disclosed without the student's formal written consent. Grades are considered to be part of the student's educational record and will not be disclosed to parents without the student's formal written consent. Upon obtaining such written consent, the College will provide information to parents (or guardians).

All students will be required to declare their tax status at the commencement of each academic year. Any student who claims not to be a legal dependent must provide appropriate evidence to the College in writing within the first month of each academic year.

Student Right-to-Know Act

In compliance with the federal Student Right-to-Know Act requiring institutions of higher education to make available graduation rates, Union has calculated a six-year graduation rate of 85% based on the first-time, first-year student cohort entering in September 2017. This calculation does not include students who have transferred into the College from other institutions. The complete graduation rate report is available online at https://www.union.edu/institutional-research/graduation-retention-dashboard or by contacting the Office of Institutional Research, ir@union.edu

Posthumous Degree Policy

Policy for Awarding a Degree Posthumously

"Union College may consider awarding a posthumous degree in the rare and tragic circumstance that a matriculated student who is close to degree completion, dies. The following criteria and processes will apply:

● The student was in good academic standing.
● The student had no academic dishonesty or community standards sanctions pending.
● The student must have been enrolled in any term within one year of the degree date.
● The student had completed 75% of their requirements towards fulfilling their degree (in each category, including major, common curriculum, and number of credits overall).
● The major department supports the awarding of the degree.
● The request for awarding the degree is supported by the College (represented by the Vice President of Academic Affairs) and the family of the deceased.
● The Vice President for Academic Affairs may consider cases that do not meet the criteria put forth when extraordinary circumstances prevail.
● All degrees granted by Union College require the approval of the Board of Trustees."

Records Post Graduation

Upon graduation from the College or otherwise leaves the college, the academic records at Union College will be closed and cannot be changed.

Academic Support and Services

Academic Affairs

Vice President for Academic Affairs and Dean of the Faculty: Michele Angrist, Feigenbaum Hall, (518) 388-6102

Dean of Academic Departments and Programs: Kara Doyle, Olin Center 210 (518) 388-6233

Dean of Studies: Michelle Osborn, Olin Center 210 (518) 388-6234

Assistant Vice President for Academic Planning and Operations: Greta Donato, Feigenbaum Hall, (518) 388-6033

Academic Affairs is responsible for the formulation of educational policy, matters involving the faculty, and all academic related processes. The Academic Affairs Office includes the Dean of the Faculty and Vice President for Academic Affairs, the Dean of Academic Departments and Programs, the Dean of Studies and the Assistant Vice President for Planning and Operations.

The Dean of the Faculty and Vice President for Academic Affairs has responsibility for all Academic Affairs areas, including academic matters related to faculty and students, the curriculum and academic budgeting. Supervisory responsibilities include the College Grants and Sponsored Programs, Institutional Research, International Programs, Learning Design and Digital Innovation, Registrar's Office, Schaffer Library, the Union College Academy for Lifelong Learning (UCALL), the Director of Academic Affairs Assessment, the Assistant Dean of Diversity, Equity & Inclusion, the Dean of Engineering, the Director of General Education, and the Director of Templeton Institute of Engineering.

The Dean of Academic Departments and Programs oversees all academic departments and interdisciplinary programs, playing a key role in faculty recruiting, faculty development, curriculum development and advising the Dean of the Faculty and Vice President for Academic Affairs on matters associated with the review and promotion of faculty. Supervisory duties include Common Curriculum (General Education), Complex Questions: Global Challenges & Social Justice (General Education), Interdisciplinary Programs, Faculty Development, the Leadership in Medicine program, Makers Space, and department chairs and program directors.

The Dean of Studies has responsibility for the implementation of the Honor Code and has academic policies and has supervisory responsibilities of Academic Advising, the Academic Opportunity Program, Fellowships and Doctoral Pathways, the Health Professions Program, the 3+3 Accelerated Law Program, the Scholars Program, Student Success, Undergraduate Research, and the Writing Center.

Assistant Vice President for Academic Planning and Operations manages academic finances and facilities, supervises the Engineering Machine Lab and supports the Dean of Faculty and Vice President for Academic Affairs, faculty members, administrators and staff within Academic Affairs on various resource matters.

Academic Opportunity Program/Higher Education Opportunity Program

Director: Philip Poczik, Olin Center 112, (518) 388-6115
aop@union.edu

The Academic Opportunity Program (AOP) and the Arthur O. Eve Higher Education Opportunity Program (HEOP) have a long and proud tradition of academic excellence, serving students for over fifty-five years. These talent search programs offer support services to ensure academic success for a select group of students. Services include: an intensive five-week pre-first year summer program; individualized and group tutoring; academic, career, and financial counseling; and a peer mentoring program.

Academic Advising & Enrichment

Director Tom Jordan, Old Chapel 201A, (518) 388-7116

Academic advising is central to the mission of a liberal arts college such as Union and is a key faculty responsibility. Union students enjoy a close working relationship with the faculty advisors who encourage and assist their advisees to make informed choices that maximize the benefits of a liberal arts education. First-year students are assigned advisors by the Dean of Studies Office while upper-class advisors are chosen by the student in conjunction with the corresponding department chair. Students may request a change of advisor at any time by completing the Change of Advisor form. Additional information on advising can be obtained on the advising website.

Accommodative Services Office

Students interested in support services for learning disabilities should refer to "Accommodative Services" in the Student Services section for additional information. Students are also encouraged to consult with the Director of Accommodative Services located in Schaffer Library Room 222.

Health Professions Advising

Director of Health Professions Program: Professor Carol Weisse (Psychology), Olin Center 110C, (518) 388-6300

The Health Professions Advising Office at Union College offers tailored advising to students who are planning a career in medicine (including osteopathy, dentistry, podiatry, veterinary medicine, pharmacy, and other health professions such as nursing, physician assistant). In addition to academic advising, advisor works closely with students to help them identify the kinds of experiences on campus and in the community that will foster personal growth and the development of interpersonal skills necessary for a successful career in healthcare delivery.

Professional schools give no preference to any particular major when seeking candidates; therefore, Union College does not offer a "premedical" major. Although many major in the natural sciences, students are encouraged to choose a major in any field in which they are interested. Today more than ever, professional schools are searching for students who have not only mastered the sciences but who also have backgrounds that are well-rounded and diverse. Please consult with the directors on requirements for various professional schools. Most professional schools require students to complete and do well in the following courses:

- Two English courses (satisfied by First-Year Preceptorial and at least one English elective)
- Calculus course (through MTH 112 or MTH 113)
- Three biology courses (BIO 103 and BIO 104 or BIO 205)
- Five chemistry courses (CHM 101 and CHM 102 or CHM 110H ; CHM 231 and CHM 232 ,BIO 335 or BCH 380 or CHM 382)
- Two physics courses (PHY 110 and PHY 111)

Note: Introductory Psychology or Sociology and statistics are also recommended. Some health professions programs (e.g., physical therapy, occupational therapy, nursing) also require additional courses such as Microbiology and Developmental Psychology as well as Human Anatomy and Physiology.

Information Technology Service

Chief Information Officer: Ellen Yu, Steinmetz Hall, (518) 388-6293

Union College and Information Technology Services (ITS) make computing resources available to all students. Through Union's G Suite environment, students have access to Google Mail, Calendar and Drive. Wireless network access is available in all buildings on campus in addition to outside wireless access in Library Plaza and the College's outdoor classroom. Union College has partnered with Apogee to provide high-speed internet access through the residential network with 24/7 customer support. There are also many other resources dedicated to assist students. Assistance with hardware and software problems is provided by the Union Student Technical Assistance Resources (USTAR), the student-run technical support program to assist students by students. Full-time Help Desk personnel are also available to provide assistance. Additional information including network access, assistance, training, computing policies & forms can be obtained from the ITS website.

Language Center

Director: Audrey Sartiaux; Old Chapel 3rd Floor, (518) 388-6216

The Language Center is open to all students with a valid Union ID. The Center is composed of a main lab/classroom, and a collaborative workspace. The main lab contains 10 PC's and USB headsets with microphones. Language methods for self-study are available for the languages taught at the college (to be used in the center only). All computers have East Asian, Slavic, and Arabic languages enabled as well as Romance Languages. Language Assistants and Language Mentors (skilled in Arabic, Chinese, French, German, Hebrew, Japanese, Portuguese, Russian, and Spanish) are available during their office hours to answer questions and to help with practicing your language skills, reviewing vocabulary etc. This is a complimentary service for all Union Students. Conversation Partners are available for students registered in an Intermediate Spanish course (see your syllabus). The center is open during Union College academic terms. Consult the Language Center website for more information (such as opening hours Language Assistants and Mentors' hours).

Office of Student Success

Director: Lesly Clay, Old Chapel 201C, (518) 388-6493

The office provides academic support for all students at Union to help them reach their full academic potential. A variety of programs are available to assist students in becoming stronger, more independent learners. Current programs include Supplemental Instruction, Academic Coaching with a Peer Coach or Director and Peer Mentoring programs.

Prelaw Advising

Advisor: Associate Professor Bradley Hays (Political Science), (518) 388-6227

Union College provides prelaw advising to students interested in graduate legal education. As a general rule, law schools do not require a specific major but instead look for academic success in a student's chosen academic discipline. Given the many available academic paths to law school, prelaw advising is inclusive of general curricular and extracurricular guidance, insight into the Law School Admission Test and the application process, and aid in targeting appropriate law schools for admissions.

Fellowships and Doctoral Pathway

Director: Lynn Evans, 17 South Lane 104, (518) 388-6643

The Office of Fellowships and Doctoral Pathways provides support to students and alumni applying for prestigious, external undergraduate and postgraduate awards as well as those applying to Ph.D. programs. Students are recruited to apply for fellowships and scholarships months before their national deadlines and months to years before doctoral program application deadlines. During the recruitment period, the director works closely with students to understand their goals and to match opportunities to their strengths and needs. The office then oversees the application process for the appropriate awards and/or graduate programs. Union regularly supports students for awards such as the Rhodes Scholarship, the Marshall Scholarship, the Fulbright programs, the Watson Fellowship and many more.

Permanent Collection and Mandeville Gallery

Collections Manager/Registrar of the Permanent Collection: Sarah Mottalini, Schaffer Library 212, (518) 388-6318; mandevillegallery@union.edu; ucpc@union.edu

https://muse.union.edu/mandeville

The Union College Permanent (Art) Collection and Mandeville Gallery are responsible for stewarding over 3,200 works of art and items of material culture, and for producing art exhibitions in several campus locations.

The Union College Permanent Collection (UCPC) holds significant visual art resources from internationally recognized artists, as well as Eastern and ancient cultures. Our strongest collections consist of contemporary art, historic 19th century scientific instruments, ancient Asian ceramics, fine art prints on paper, and 19th century portrait paintings. Many artworks from the UCPC are installed around campus in departmental buildings, administration offices, and throughout the library, and include informational labels. Images and details of a number of sub-collections can be found on our website.

The galleries are the Mandeville Gallery on the 2nd floor of the Nott Memorial, and the Castrucci Gallery located in the Peter Irving Wold Center. Artwork is also regularly displayed in Schaffer Library. All exhibitions, as well as our events programming, which includes artist talks, receptions, and demonstrations, are free and open to the campus and the community during academic terms. Information about exhibitions can be found on our website.

The offices are located on the second floor of Schaffer Library in rooms 212, 239 and 241.

Registrar's Office

Silliman Hall, (518) 388-6109
www.union.edu/offices/registrar

The Office of the Registrar is responsible for overseeing the functions of online registration, maintenance of student schedules, creation of each term's course and final exam schedules, creation of the academic calendar, assignment of classrooms, grade entry, Self Service (a new student planning module), rank in class, Dean's List, academic records, certification for graduation, transcript processing, certification of eligibility for veterans' benefits, and the maintenance of the online Academic Catalog. The Registrar's Office also coordinates the reporting of student enrollment status and degree verification to the National Student Clearinghouse, which in turn, reports to the National Student Loan Data System.

Schaffer Library

College Librarian: Frances Maloy, (518) 388-6739
www.union.edu/Library

Schaffer Library provides print and electronic information resources in a comfortable environment for reading, writing and research. The library is open extended hours during the term and 24 hours per day, 7 days per week during exams. The friendly and knowledgeable staff assist students with all phases of their research. The library provides a variety of spaces for quiet study, collaborative learning as well as production areas furnished with both Apple and Windows workstations, software, scanners, printers, and other hardware. The Adirondack Research Library, located 4 miles from campus in the Kelly Adirondack Center, houses an extensive collection on the 20th century wilderness movement in New York State's Adirondack Park. The Special Collections and Archives Department houses rare and unique materials that document the College's history along with rare books and prints available for research upon request. Refer to the Schaffer Library website for additional information.

Undergraduate Research

Director: Associate Professor Matthew Anderson, Steinmetz Hall 219A, (518) 388-6848, ugr-director@union.edu

Students are encouraged to explore scholarship through a diverse array of student-faculty collaborative opportunities at Union. All students complete a research-intensive course as part of the Complex Questions Curriculum. There are many other research activities available to students including senior projects / theses, summer research, Scholars research projects, practica, independent studies, and work studies, all of which are supervised by a faculty member.

There is generous funding available to support students in their scholarly pursuits: (i) Undergraduate Summer Research Fellowships, which fund students to work on independent projects with a faculty mentor during the summer full time for 4 to 8 weeks, (ii) the Student Research Grant (SRG) program, which provides financial support for students for Scholars research projects, practica, and senior thesis / project expenses, and (iii) the Student Conference Travel Grant (SCTG) program, which funds student travel to professional society meetings and to local and national undergraduate research conferences to present their research results. More than 500 students participate in the annual Steinmetz Symposium, a celebration of student scholarly work, held in early May where students communicate the results of their scholarly efforts through oral presentations, exhibits, posters, and performances.

Writing Center

Director: Joseph Johnson, Schaffer Library 221, (518) 388-6680

The Writing Center provides individualized peer-feedback to Union students working on writing projects of all kinds-from course assignments and class projects across the curriculum to personal statements for graduate and professional school, essays for study abroad or internship applications, scholarship and fellowship statements, job application essays, and more. Specially trained writing mentors-Union undergraduates from a range of different majors-work with their peers in an open, supportive, and enthusiastic learning environment.

The Writing Center is located on the second floor of Schaffer Library, Rooms 226 and 227, and is open during the term, Sunday through Thursday, 3-11pm, by appointment only. The Writing Center is closed on Friday and Saturday, and when classes are not in session. Learn how to make an appointment online.

Admissions

The admissions committee looks for candidates who will benefit from and contribute to the academic, intellectual, and extracurricular life of the College.

We seek students with excellent grades and look favorably on applicants who exceed the minimum number of high school courses required. Advanced, honors and Advanced Placement or International Baccalaureate courses are strongly encouraged. Recommendations from your school counselor and teachers are also important. Beyond academic excellence, we look for personal responsibility and integrity and carefully review your talents and background. In particular, we look for students who can participate enthusiastically and constructively in the life of the College.

Application and Admission Procedures

Applications should be submitted in the final year of secondary school and should be filed by November 1 for Early Action, Early Decision I and the Leadership in Medicine Program or by January 15 for Early Decision II, Regular Decision and the 3 + 3 Accelerated Law Program. The admissions committee announces its decisions in December and March. There is a $60 application fee for U.S. citizens and permanent residents.

Admitted candidates must reserve their places by paying the $750 admissions deposit on or before May 1. The enrolled student then becomes a degree candidate entitled to a place in the class with all the rights and privileges of a Union student. Reservations submitted without the deposit are considered incomplete.

Requirements for Admissions: The admissions committee will carefully consider applications from candidates whose preparation is unusual and who, for good reason, do not meet the norms as stated below. Normally, a minimum of 16 units (courses) of secondary school preparation are required for admission. These should include certain fundamentals such as English, mathematics, science, social studies, and world language including American Sign Language (ASL). The following units are recommended:

For Liberal Arts: Students should have four years of English, at least two years of a world language or ASL, and a minimum of two and one-half years of college preparatory mathematics. Students planning to major in chemistry, physics, and mathematics should have at least three and one-half years of mathematics.

For Engineering: Students planning to complete the engineering curriculum should have elementary and intermediate algebra, geometry, trigonometry, chemistry, physics, and four years of English. Although more advanced mathematics work is not required, it will prove helpful.

For the Leadership in Medicine Program (LIM): Students applying for the accelerated B.S./M.S. or M.B.A./M.D. program sponsored by Union College, Clarkson University, and Albany Medical College must present at least four years of English, one year each of biology and chemistry, and at least three years of college preparatory mathematics. A year of physics is recommended but not required. International students are not eligible for the LIM program.

Information Sessions, Tours and Online Interviews: Student-guided tours are available in conjunction with information sessions weekdays and on many Saturdays throughout the year, union.edu/visit

Interviews are strongly recommended and are held in person and online. They are offered weekdays from June 1 to January 31 and on select Saturdays in the fall for students who will be or are seniors and can be scheduled at union.edu/interviews. Transfer students may schedule an interview by emailing admissions@union.edu.

School Reports and Recommendations: The secondary school report, a recommendation from the school counselor and a transcript of the academic record, are parts of the Common or Coalition Application. The transcript should include a listing of the courses in progress as well as completed courses. A report of quarter or mid-year grades is required. A letter of recommendation from a secondary school teacher who has taught the student is also expected. The recommendation may be submitted through the Common or Coalition Application or sent directly to the admissions office by the teacher.

College Entrance Examinations: Applicants may submit standardized test scores and choose to have the scores considered with the application. For most applicants, standardized testing is optional. The SAT or the ACT is required for applicants to the Leadership in Medicine program and for the 3+3 Accelerated Law Program. The November test is the last available to applicants for the Leadership in Medicine program. The December test is the last available for the 3+3 Accelerated Law Program. Testing is strongly recommended for international applicants for whom English is not a first language; the TOEFL, IELTS, ACT or SAT, or the Duolingo English test may fulfill that requirement.

Early Action: The deadline for Early Action is November 1. Early Action applications are evaluated in the same way as Regular Decision applications. Students receiving offers of admission in Early Action may apply to other colleges and will have until May 1 to accept or decline Union's offer of admission. Early Action decisions will be released in mid-January.

Early Decision: Many of Union's applicants request Early Decision. The College recommends this program to all candidates who know that Union is their first choice college. Early decision candidates are favored in evaluation. A candidate for Early Decision must check the appropriate box on the application and submit an Early Decision Agreement Form. An Early Decision application carries with it the commitment that the candidate will enroll if admitted. Regular applications to other colleges may be filed - with the understanding that these will be withdrawn as soon as the candidate is admitted to Union.

Applications and requests for Early Decision must be received by the College by November 1 for Option I or January 15 for Option II. All other forms and credentials, including the Early Decision Agreement, must also be received by November 1 or January 15, respectively. Early Decision candidates will be notified of the decision by mid-December

for Option I and by early February for Option II. Candidates not offered admission under the Early Decision Program may either be deferred to the regular applicant group for reconsideration or denied admission.

Early Admission: In recent years, a number of high school students have expressed an interest in accelerated completion of high school requirements and early admission to the College. The admissions committee will consider candidates for early admission providing that, on the basis of high school achievement, they have demonstrated the potential to do college-level work. Interviews are required of candidates requesting early admission.

Deferral: Union College allows any student who has paid the enrollment deposit to defer entry for one year at a time (gap year) for reasons such as community service, health, military service, travel and work. The deferral may be renewed for a second year. Requests to defer must be received by July 1 and submitted to the Director of Admissions for Programming and Partnerships, Susan Hanks, at hankss@union.edu for approval. Students who choose this option commit to attending Union in the year after the gap year and agree not to apply to other colleges. Students may take courses at another institution, but may not be fully matriculated. Union accepts up to six AP results, IB results and/or college classes for credit. Applicants for financial aid must submit the updated CSS Profile and FAFSA by January 15 of the gap year. Merit scholarships are guaranteed at the same level for the following year.

International Students

In addition to the application requirements described above, applicants who are citizens of other countries must be proficient in reading, listening, writing, and speaking English as English is the language of instruction at Union. The admissions committee requires that all international students (for whom English is not their first language) submit the results of the Test of English as a Foreign Language (TOEFL) or IELTS, or Duolingo (DET) examination. The SAT or ACT is also strongly recommended for international applicants. English language proficiency waivers are granted on an individual basis at the discretion of the admissions team. Admissions interviews are recommended for all applicants and required for students from China, and Vietnam. Other applicants may be asked to complete an interview by the admissions committee.

Limited financial aid is available to non-U.S. citizens, and therefore competition for funding is selective. Union expects international applicants to be able to contribute a minimum of $7,500 (USD) each year toward the cost of attending. All aid is determined by the College's evaluation of a family's financial contribution. To apply for aid, non-U.S. citizens must submit the CSS Profile and tax returns from their country of residence. If you do not have tax returns, an employment verification letter from each working parent or guardian's employer may be submitted in lieu of tax returns. Canadian citizens are required to file the CSS Profile form with the appropriate agency by January 15. Additional information is available at www.union.edu/finaid.

Transfer Students

Union welcomes the applications of students wishing to transfer from other two-year and four-year colleges. In making its decisions, the admissions committee considers college work completed and the recommendations of appropriate officials at the college presently attended. Students should arrange for transcripts of all college work, a college report, a secondary school transcript and recommendations to be submitted to the admissions office. A personal interview is not required. Transfer students must have completed some college courses within the last five years to be considered for admission.

Financial aid for transfer students is limited and depends on the financial need. Candidates applying for financial aid must submit the College Scholarship Service's Profile Form and the FAFSA Form to their respective processing agencies.

The admissions process for transfer students follows a separate timetable. For admission to the fall term, transfer applicants must submit their completed applications by April 15. For entry into the winter term, the deadline is

November 1; while for the spring term, the date is February 1. Applicants are notified of admissions decisions on a rolling basis. Admission for spring and winter terms is on a space available basis only.

Visiting Students

Occasionally, non-matriculated students may wish to attend the Union on a full-time basis. These students are considered visiting students. They may take courses full-time at the College for a maximum of two trimesters, at which time they must apply for transfer admission and be admitted before continuing their studies. The Registrar's Office is the entry point for Visiting Students. High school students who wish to take a course or courses at Union should inquire about that possibility at the Registrar's Office.

Admissions Timetable

Application Deadlines:

Early Action deadline is November 1.

Early Decision I deadline is November 1.

Leadership in Medicine deadline is November 1.

Regular Decision deadline is January 15.

Early Decision II deadline is January 15.

3+3 Accelerated Law Program deadline is January 15.

Transfer applications should be filed by April 15 for fall term, November 1 for winter term, and February 1 for spring term.

Entrance Examinations: Standardized testing is optional for most applicants. If the candidate submits testing, the SAT or the ACT must be completed no later than January of the senior year (by November/December for Early Action/Early Decision and accelerated programs).

Interviews: Individual interviews are strongly recommended and must be completed no later than two weeks after the application deadline. Register at www.union.edu/interviews.

Financial Aid Applicants: Applicants must file the College Scholarship Service's (CSS)Profile Form and the Free Application for Federal Student Aid (FAFSA) with the appropriate agencies. Citizens of other countries file the CSS Profile. Financial aid deadlines are the same as the application deadlines above.

Candidate Reply Date: Accepted candidates reserve places in the first-year class by May 1.

Admissions Office Hours: Weekdays, 8:30 a.m. to 4:30 p.m. Selected Saturdays in April and June through November, 10 a.m. to 2 p.m.

Campus Tours: Weekdays from the Admissions Office and on selected Saturdays in April and June through November. www.union.edu/visit

Common Curriculum

General Education

For a transition period Union will have two general education curricula: (1) students who entered Union before the fall of 2022, or who transfer into a class that began before this date, will participate in the "Common Curriculum"; (2) students in the class of 2026 who enter Union in the fall of 2022 as well as students in subsequent classes will participate in the "Complex Questions" curriculum.

The Common Curriculum

Director: Professor Judith Lewin (English), education@union.edu

The Common Curriculum embodies Union's commitment to build intellectual foundations, explore the liberal arts, and create dynamic connections across boundaries as students discover new interests and contribute to humanity. The courses in the Common Curriculum create the essential foundation of a Union Education in the liberal arts. Through them students begin to find the creative intersections of ideas that contribute to society and touch lives.

Students take at least ten courses in completing the Common Curriculum. Students may satisfy any of the requirements except FPR/FPR-H and SRS/SCH-150 and WAC (Writing Across the Curriculum) with appropriate courses taken on international programs. Courses other than FPR/FPR-H and SRS/SCH-150 may be used to meet the requirements of a major or minor unless specifically prohibited by a particular program or department. Academic policies and administrative procedures for the Common Curriculum can be found in the Common Curriculum Advising Guide located in the Resources Section of the Common Curriculum website. Advisers and students should study the information carefully.

Courses that Build Intellectual Foundations

First-Year Preceptorial (FYI 100) engages students in the exploration of ideas and diverse perspectives through critical reading, thinking, and writing. Note that students in the Scholars Program take Scholars Preceptorial (FYI 100H).

Sophomore Research Seminar (SRS 200) ensures that students have an early hands-on experience thinking and working as an academic researcher. Note that students in the Scholars Program take the Scholars Research Seminar (SCH 150) after the Scholars Preceptorial.

Literature (HUL) expands the moral imagination needed to understand one's self and fellow human beings through literary analysis, interpretation, and reflection. Complete any one course listed in the course schedule as HUL from English (EGL), Modern Literature in Translation (MLT), or another department

Natural Science with Lab (SCLB) changes the way students think about the natural world when students understand the scientific method and put it to work. Complete any one Lab course in Astronomy (AST), Biochemistry (BCH), Biological Sciences (BIO), Chemistry (CHM), Geosciences (GEO), Physics (PHY), certain Psychology courses (PSY 310, PSY 312 , PSY 313, PSY 330, PSY 351) or any courses listed in the course schedule as SCLB.

Quantitative and Mathematical Reasoning (QMR) equips students with unique insights and skills necessary to solve complex problems. Complete any one course from Mathematics (MTH) except MTH 100 or any courses listed in the course schedule as QMR.

Courses that Explore the Liberal Arts

Arts and Humanities (HUM) courses enable students to find themselves and voice in creative expression and exploration of the works of the imagination. Complete any one course in Art History (AAH), Dance (ADA), Music (AMU), Theater (ATH), Studio Arts (AVA), Classics (CLS), English (EGL), Film Studies (FLM), Gender, Sexuality, and Women's Studies (GSW), Philosophy (PHL), Religious Studies (REL), or courses offered by the Department of Modern Languages and Literatures.

Social Sciences (SOCS) courses confront students with the complexity and challenges of our world by analyzing the societies we create. Complete any one course in Anthropology (ANT), Economics (ECO), Gender, Sexuality, and Women's Studies (GSW), History (HST), Political Science (PSC), Sociology (SOC), or PSY 100.

Science, Engineering, and Technology (SET) courses introduce students to Union's unique commitment to teaching Science and Engineering as Liberal Arts and examining their impact on our humanity. Complete any one science in Science (with or without lab, including a second SCLB), Engineering, or Computer Science (CSC), certain Psychology courses (PSY 210, PSY 311 , PSY 315 , PSY 410), or any course listed in the course schedule as SET.

Courses that Create Connections across Boundaries

Languages and Cultures (LCC) courses empower students as citizens of a global community to contribute across cultural boundaries and shape our shared future. Complete the LCC requirement in one of these ways:

- **OPTION A Language Sequence:** complete a sequence of two language courses in the same language at the 101 level or higher. PLEASE NOTE: for Latin or Greek, you must complete LAT 102 and LAT 103 or GRK 102 and GRK 103 ; LAT 101 and GRK 101 do not count for LCC language sequence credit.
- **OPTION B: Cultural Analysis Sequence:** complete any two non-language courses at Union that carry the LCC code.
- **OPTION C Study Abroad:** complete a full term abroad that deals with a cultural tradition outside of the US. This satisfies both courses of the LCC requirement. Complete a mini-term that deals with a cultural tradition outside of the US. This satisfies one course of the LCC requirement. If the mini-term is associated with approved pre-departure and/or post-return coursework equivalent to a 1.0 academic credit course it satisfies the two-course LCC requirement.

Writing Across the Curriculum

The Writing Across the Curriculum (WAC) program is designed to promote the development of students' writing and critical thinking skills. Every student will have opportunities to improve these skills by completing the following requirements:

1. First-Year Preceptorial
2. Sophomore Research Seminar
3. Five courses from at least two different academic divisions (refer to "Divisions" below) that have been certified as WAC courses
4. A Senior Writing Experience such as a senior thesis or a senior seminar paper.

The First-Year Preceptorial and Sophomore Research Seminar, required of all students, focus on developing critical reading, analytic writing, and research skills. The WAC courses that fulfill the second requirement fall within the normal disciplinary offerings and provide students with feedback on their writing while incorporating writing as an important and clearly evaluated part of the coursework.

Courses currently certified by the College Writing Board as meeting WAC requirements are listed in the course schedule posted on-line each term. As courses and course syllabi frequently change, additional courses are certified each year by the College Writing Board and the roster of WAC courses changes over time.

The form of the senior writing experience that meets the third requirement is determined by the Writing Board and the student's major department(s). In most departments, this requirement is fulfilled by completing a thesis, another research project, or a senior seminar. Courses that satisfy this requirement are designated as WS courses.

WAC: course certified by the Writing Board
WS: fulfills senior writing requirement
WAC/S: fulfills WAC or Senior Writing

Divisions

Departments of instruction are grouped into divisions as follows. For courses in interdisciplinary programs not listed below, students should consult with their advisor or with the Director of Interdisciplinary Studies.

Arts and Humanities (Division I)

Classics
English
Film Studies
Modern Languages and Literatures
Music
Philosophy
Religious Studies
Theater and Dance
Visual Arts

Social Sciences (Division II)

Africana Studies
Anthropology
Economics
History
Political Science
Sociology

Science and Mathematics (Division III)

Biochemistry
Biological Sciences
Chemistry
Geosciences
Mathematics
Neuroscience
Physics and Astronomy
Psychology*

Engineering and Computer Science (Division IV)

Computer Science
Electrical, Computer and Biomedical Engineering
Mechanical Engineering

* Beginning in 2018-19, courses in the Psychology Department will count in Division III for the requirement that students have WAC courses from at least two divisions.

Course Listing

Courses listed below are grouped together **alphabetically by subject prefix**. To search for a specific course, please follow the instructions in the course filter box below and click on "Filter."

Departments and interdisciplinary programs are described in detail on the Majors, Minors, and Other Programs page within this catalog. Please refer to the detailed sections on each area of study for more information. Requirements to fulfill a major or minor appear within each program or area of study.

All students must also complete the courses in the Common Curriculum (General Education), including Writing Across the Curriculum (WAC) requirements and other requirements that pertain to the undergraduate degree. Courses are numbered as follows.

000-049 - Non-credit courses.

050-099 - Common Curriculum (General Education) courses and others that do NOT count toward the major.

100-199 - Introductory-level courses which count for the major.

200-299 - Sophomore/junior-level courses that can be taken by non-majors. (Some departments may use 200-249 and 250-259 to delineate between sophomore and junior level offerings.)

300-399 - Upper-level courses intended primarily for majors - these are courses representing the depth component of the major.

400-499 - All advanced courses for seniors, including those used to fulfill WS (Senior Writing Experience requirement), small seminars, research, thesis, and independent studies.

Wherever possible, the departments have indicated the instructor and the term during which a course is given. Some courses are offered only occasionally and are so indicated. The College retains the right not to offer a course, especially if enrollment is insufficient.

A few courses are not valued at full course credit, and some carry double credit.

A full course unit may be equated to five quarter-credit hours, or three and one-third semester credit hours.

Art History

AAH 101 - Islamic Art and Architecture

Course Units: 1.0 A broad and select survey of the art and architecture of Islamic cultures from the 7th through the 16th centuries that will stress the religious, social, economic, and historical contexts within which Islamic arts and architecture developed. We will study a variety of arts in addition to the traditional architecture, painting and sculpture familiar to students in Western art history surveys, including calligraphy and book painting, metalwork, ceramics, glass, carpets and textiles, and gardens and landscape design. **CC:** LCC, HUM **ISP:** AIS, REL

AAH 102 - Medieval Art and Architecture of Northern Europe, 5th-15th Century

Course Units: 1.0 An introductory survey of sculpture and decorative arts, manuscripts, painting and architecture from the seventh through fourteenth centuries north of the Alps. Examines the emergence of western medieval culture and attitudes toward the arts, as well as western European views of its Byzantine and Muslim neighbors. In addition to introducing major monuments and patrons, students will be introduced to the materials and techniques used to produce the art and architecture of the Middle Ages. The art of medieval Italy is covered in a separate course, AAH 300 **CC:** LCC, HUM

AAH 103 - Introduction to European Painting and Sculpture, 17th-20th century

Course Units: 1.0 Major works of art and artistic traditions from the 17th century to the present, primarily in western Europe. The vocabulary and techniques of painting, sculpture, architecture, the decorative arts, and printmaking; the emergence of modernism, abstraction, new materials, and non-objective art. Emphasis on the institutions of art and historical context as well. Visual analysis, verbal and written interpretation of art. **CC:** LCC, HUM

AAH 104 - Arts of China

Course Units: 1.0 This survey covers works of art and artistic traditions in China from the Neolithic period to the early 20th century. Lectures will focus on representative works in various media - calligraphy, painting, sculpture, architecture, and decorative arts - within the contexts of the tomb, court production, literati culture, Buddhist and Daoist temples, and interactions with other cultures. **CC:** LCC, HUM **ISP:** AIS

AAH 105 - Arts of Japan

Course Units: 1.0 This introduction to the arts of Japan from the Neolithic period to the 20th century will focus on key monuments of sculpture, architecture, painting, calligraphy, gardens, printing, and other arts within their historical and cultural contexts. Themes discussed include: materials and technologies, sacred and profane spaces, patrons and viewers, tradition and modernity, and the creation of a distinctly "Japanese" aesthetic. **CC:** LCC, HUM **ISP:** AIS

AAH 106 - Arts of India

Course Units: 1.0 This course is designed as an introduction to ways of seeing, understanding, and questioning the visual arts in India. You will learn how the visual arts (cities, architecture, monuments, statues and painting) have informed us about the history, culture, and religion of India from the rise of civilization to the colonial period. It is important to approach the works we will study not simply as objects of aesthetic taste, but as meaningful and functional to those who commissioned, used, created, and experienced them. In addition to studying the social and political nature of the arts, a large portion of this course looks at works that served to activate the sacred within and across several religious belief systems, including Buddhism, Hinduism, and Islam. **CC:** LCC, HUM **ISP:** AIS, REL

AAH 111 - The Art and Architecture of Ancient Greece

Course Units: 1.0 A survey of the art and architecture of ancient Greece and the Hellenistic world which examines origins, development, influences and the contextual meaning of material culture, We will examine its importance to the individual, the state, and other cultures contemporary with Greece and the Hellenistic Kingdoms. We will be considering a variety of art forms including architecture, sculpture, painting, and metalwork. **Cross-Listed:** CLS 164 **CC:** LCC, HUM

AAH 112 - The Art and Architecture of Ancient Rome

Course Units: 1.0 A survey of the art and architecture of the ancient Roman world which examines origins, development, and the contextual meaning of material culture for the state, the individual and various social groups. Rome's relationship with non-Roman peoples around the Mediterranean basin, Northern Europe and the East will be an important part of the course. We will be considering a wide variety of art forms including architecture, sculpture, painting, glass making, ceramics and metalwork. **Cross-Listed:** CLS 165 **CC:** LCC, HUM

AAH 114 - The Golden Age of Venice: Art and Architecture in "The Most Serene Republic"

Course Units: 1.0 An introduction to the art and architecture of the Republic of Venice during the period of its economic, political, and artistic "golden age" - from the 14th through the 17th centuries. We will consider the many

relationships between the material culture of the city, its maritime and land-based empires, and Venice's role as a commercial and cultural power in Western Europe during a period of great change. Objects and structures ranging from oil paintings to the new invention of printed books, not to mention the building in which they were created and used, will be examined from multiple points of view: materials, fabrication and workshop practice, artistic reputation, patronage and costs, site and functions, innovation and tradition. **CC:** HUM, LCC

AAH 115 - Leonardo da Vinci: Science, Art, and Technology in the Early Modern Era

Course Units: 1.0 This course explores the history of science and technology during a fascinating and complex period when "modern" sciences and engineering are just beginning to emerge in Western Europe. Our focus will be on the artist and thinker Leonardo da Vinci, whose writings, drawings and other works of art provide a vivid picture of the state of imagination, observation, and the pursuit of scientific and technological knowledge, both theoretical and practical, during a time of great change. Leonardo's remarkably varied interests will allow us to study a wide range of subjects, from botany, optics and astronomy to hydraulic, civil and military engineering; from mining and metallurgy to anatomy and medicine; from diving bells to flying machines. This course has no prerequisites. **CC:** HUM, LCC, WAC **ISP:** STS

AAH 116 - Rome in the Age of Michelangelo

Course Units: 1.0 The most famous artist and the most famous city in the history of Western culture. How did the much earlier and long-lived fame of Rome affect its most famous artist, and how did both interact with the equally long-lived institution of the Christian papacy? We will examine how culture, language, politics, warfare and religion all intertwined in the art and architecture of the period, particularly as exemplified in the career of Michelangelo, a native of Florence who spent the majority of his working life in Rome. **CC:** HUM

AAH 117 - Pyramids to Skyscrapers: An Introduction to the History of Western Architecture

Course Units: 1.0 This course is a wide-ranging survey that will introduce students to the history of humankind's built environment within the Western tradition, with excursions to the Middle East. The course is organized around a series of key monuments that will help organize our approach to each period, and we will proceed chronologically. We will consider design, materials and techniques, patronage, function, and the evolution of the professions of builder and architect. We will also ask what buildings meant to the societies that built them, and how those meanings might have changed, and been manipulated, over time. **CC:** HUM, LCC

AAH 160 - Art and Architecture of the United States

Course Units: 1.0 An introductory survey of the visual culture of the United States from colonial times through the present including painting, sculpture, architectural structures, photography, folk traditions and objects more recently defined as "material culture." Artists and media are situated and studied within the context of broader cultural, political and social themes. Emphasis on visual and textual analysis. **CC:** HUM **ISP:** AMS

AAH 163 - Latin American and Caribbean Art of the 19th and 20th Century

Course Units: 1.0 An examination of the major aspects of Latin American and Caribbean art from the early 19th through the 20th century. Emphasis is placed on integrating the social and political background of the various cultures with the key artists, artistic issues and movements of particular countries and periods. Topics to be covered include: the influence of the major art academies in Mexico, Brazil and Ecuador, the strong links between art and politics, indigeneity, woman as artist and subject, and the ongoing dialogue with the art of Europe and later the United States. **CC:** LCC, HUM, JCAD, JCHF **ISP:** AFR, LAS

AAH 194 - Visual Culture of Communist China, 1919 to Present

Course Units: 1.0 This course explores the relationship between ideology and visual culture in China, from the founding of the Communist Party in 1919, to Mao Zedong's prescriptions at the 1942 Yan'an Conference of Literature and Art, to art policy after the founding of the People's Republic of China in 1949. Readings and discussion will cover the range of adherence and resistance to the official party line by art workers. Topics include expressionism, socialist realism, peasant art, "wound art," cynical realism, political pop, and the avant-garde, as seen in painting, sculpture, architecture, posters, advertising, video, performance, and the material culture of quotidian life. **CC:** LCC, HUM, WAC **ISP:** AIS

AAH 204 - Chinese Architecture

Course Units: 1 **CC:** LCC, GCAD, GCHF

AAH 205 - The Art and Science of Painting

Course Units: 1.0 A historical and chemical grounding in the topic of painting and its impact on society, with a focus on the 14th to the 17th centuries. Topics include inorganic and organic pigments and binders used in late medieval workshops, fresco painting, the tempera tradition, and oil painting in the Renaissance (properties of oil, mixing pigments, glazing, drying). Students will work with primary sources and secondary literature, and engage in laboratory experimentation. **Cross-Listed:** CHM 090 **CC:** SET, HUM **ISP:** STS

AAH 208 - The Business of Visual Art and Contemporary Entrepreneurship

Course Units: 1.0 In this course students will study and learn the business of the art world and entrepreneurship in the visual arts from the early 20th century through today. Topics to be covered include the economics of the art market and the commodity of art, auction houses, private collectors, art fairs, gallery ownership, art foundations, non-for-profits, and art criticism. Group assignments, field trips and guest lectures form a large component of the course. **CC:** LCC, HUM **ISP:** AMS

AAH 218 - Social Impact of Art and Entrepreneurship

Course Units: 1.0 A study of the theory, and practice of culturally driven community development with a focus on urban renewal, social ecosystems, regenerative communities, equity and diversity. Through the study and analysis of case studies, field research and workshops, students will develop creative place making proposals that support and create sustainable and connected communities. Experiential team based learning collaborators will include community partners, organizations, businesses and mentors from the City of Schenectady. Students will see and experience first-hand the transformational impact of creative place making and gain skills for successful project management that also support the development of an entrepreneurial mindset. **CC:** HUM, WAC **ISP:** AMS

AAH 220 - Reformation, Counter-Reformation, Revolution

Course Units: 1.0 This course will cover the major European art movements of the 17th and 18th centuries. It will be structured chronologically and treat the art of the Catholic Counter-reformation, the "Golden Age" in the Netherlands, the art under the absolute monarchy in France, the Rococo period, and the rise of Neo-classicism during the Enlightenment. We will examine the stylistic characteristics of these major movements, and explore the relationships between art and religious, political, and cultural history. **CC:** LCC, HUM **Note:** Course was previously titled "European Baroque Art and Architecture: 17th and 18th Century.

AAH 222 - History of Photography

Course Units: 1.0 An introductory survey of the history of photography from its pre-history to the present. We will explore the evolution of photographic expression in the period, and focus on relationships between photography and fine art, photography and popular culture, and photography and theory. We will spend time studying first-hand the original photographic works housed in Special Collections, Schaffer Library and in the Union College Permanent Collection. **CC:** HUM, JCHF, JCAD **ISP:** AMS, FLM

AAH 223 - The Nude

Course Units: 1.0 The nude in its art historical and social contexts. Traditionally considered shorthand for abstract concepts such as "truth" or "beauty," the nude is in fact a powerful index to ideas about gender, power, and sexuality in any of the historical periods which produced it. Drawing on recent scholarship, we will examine works produced in Ancient Greece, the Renaissance, and the Modern Period in social and historical context, and consider ways in which the human body has been both a stylistic vehicle for artistic expression and a social tool for constructing ideas of masculinity and femininity. **CC:** LCC, HUM **ISP:** GSW

AAH 251T - Visual Culture, Urban Landscape and Politics in Washington, D.C.

Course Units: 1.0 This course focuses on the ways Washington, D.C. residents, writers, politicians and critics have defined the nation's capital, exploring the dichotomy between Washington as the "lived" city, with that as the nation's public capital (and spectacle). The course examines the racial and class shifts over the last century in its residential space, its recent rapid gentrification, and the dramatic racial and class divide in both living space and working space. Moreover, the public space, such as presidential monuments, war memorials, federal museums, the White House, the Library of Congress, the Supreme Court, and the Mall are contentious political spaces as well as symbolic spaces for tourists viewing the "values" of the United States. **Cross-Listed:** AMS 251T **CC:** HUM, Does not get LCC credit; term-abroad not outside the United States.

AAH 260 - Nature, Art, and the Environment

Course Units: 1.0 This course studies attitudes toward nature in Western Europe and North America from the Middle Ages through the 20th century. We will be examining cultural and artistic ideas related to the natural world, noting both continuity and change. In keeping with the interdisciplinary nature of the course, we will be examining such diverse sources as religion, literature and the printed book, gardens and landscape art, painting and printmaking, the history of botany, botanical art and scientific illustration, exploration and travel, climate and geography, agriculture and industrialization, and the development of "ecology". **CC:** HUM **ISP:** ENS

AAH 265 - Environmentalism and Globalization in Contemporary Art

Course Units: 1.0 This course examines artistic practices that meld science, aesthetics, and politics in imaginative and critical ways as they address environmentalism and globalization. The course primarily focuses on 21st century artists whose work takes on such subjects as pollution, biodiversity, sustainability and climate change. We will consider the blurring of the boundaries between art and activism and the many art genres and strategies used to address these issues from photography and sculpture to community collaborations and public art. **CC:** HUM, GCAD, GCHF, GSPE **ISP:** AMS, ENS, STS

AAH 270 - Asian American Art

Course Units: This course explores Asian American art in the United States from the mid-19th century to the present. The term, "Asian American," will be seen as expansive and shifting as we learn about the histories, experiences and creative production of people of Asian heritage living and producing art in the United States. Throughout the course, we will examine what it meant to be an Asian American artist across differing moments of US history. The course will

also emphasize the ways in which art produced by these creative communities made lasting and profound contributions to American visual culture. **CC:** HUM, JCAD, JCHF **ISP:** AIS, AMS

AAH 286 - Art and Religion of the Silk Road

Course Units: 1.0 Central Asia - broadly defined as the area occupied, from East to West, by present-day western China, Mongolia, Russia, Kazakhstan, Kyrgyzstan, northern India, Pakistan, Tajikistan, Afghanistan, Uzbekistan, Turkmenistan, and Iran - has been characterized as both harsh wasteland and cultural crossroads. This course concerns the visual culture of the Silk Road of Central Asia, focusing on the roles visual culture played in establishing modes of religious imagination in medieval culture. **CC:** LCC, HUM **ISP:** AIS, REE, REL

AAH 295H - Art History Honors Independent Project 1

Course Units: 0.0

AAH 296H - Art History Honors Independent Project 2

Course Units: 1.0

AAH 300 - Italian Art and Architecture, 14th-15th Century

Course Units: 1.0 A study of art and architecture in Italy from 1100 to 1400 emphasizing religious, political, and cultural contexts and the role of the Byzantine tradition. Examination of paintings, sculpture, architecture, and the decorative arts in the major urban centers of the Italian peninsula, including Florence, Siena, Pisa, Rome and Milan, as well as the courts of northern Italy. Venetian topics are covered separately in AAH 206 and AAH 305. **Prerequisite(s):** One art history course or permission of the instructor. **CC:** HUM, LCC **ISP:** REL

AAH 304 - Renaissance Art in Italy: The 16th Century

Course Units: 1.0 A study of the visual arts that emphasizes painting, prints, sculpture, and the decorative arts. Particular attention to the growth of secular art, the role of court patronage, definitions of Mannerism, the cult of the artistic genius, and the emergence of a history of art in this period. **Prerequisite(s):** One art history course or permission of the instructor. **CC:** HUM, LCC

AAH 322 - 19th-Century European Art

Course Units: 1.0 An advanced course examining major artistic movements and developments after 1789. We will examine the stylistic characteristics of these major movements, and consider art-making of this century in the context of the development of industrial capitalism, colonialism, and imperialism. We will also consider the development of such modern art institutions as the art museum and the commercial gallery. **Prerequisite(s):** At least one Art History course, or by permission of the instructor. **CC:** HUM, LCC

AAH 340 - European Modern Art, 1880-1940

Course Units: 1.0 Major developments in modernism primarily in Europe. Traces the emergence of modernist visual vocabularies in painting, graphic arts, photography, sculpture, architecture, and "decorative arts" ranging from ranging from Van Gogh's post-impressionism, through the cubist art of Picasso and Dali's dream-like surrealism. Topics include the transformations of traditional modes of art making, the proliferation of movements and "-isms," the political functions of art and exhibitions, film as an art, and the rise of abstraction. Visual and textual analysis. **Prerequisite(s):** At least one art history course, or permission of the instructor. **CC:** HUM, LCC, WAC/S **ISP:** REE

AAH 360 - Seminar: Visual Culture, Race and Gender

Course Units: 1.0 A lecture and discussion-based course concerned with how constructions of race and sexual differentiation are played out across art history and visual culture, focusing on the visual arts of Western Europe and the United States. The first half of the course investigates the constructs of gender and race from antiquity to the middle of the 20th century as expressed in art and visual culture. The second half of the course is a close study of female artists of color living and working in the United States, grouped as African- American, Latina/Chicana, Asian and Middle Eastern and Multi-ethnic. **CC:** LCC, HUM, JCAD, JCHF **ISP:** AFR, AMS, GSWS, LAS

AAH 363 - Early American Modernism, 1900-1945

Course Units: 1.0 A study of modern art in the United States from 1900-1945. Topics to be covered reflect the divergent styles, movements and influences that gave shape to the art of this period, including the rise of the avant-garde in New York City, important patrons, social realism, the WPA and the Harlem Renaissance to name a few. Art works are studied in relation to the cultural and political context of the period. Verbal and written interpretation of art; emphasis on visual and textual analysis. **CC:** HUM, LCC **ISP:** AMS

AAH 366 - Contemporary Art

Course Units: 1.0 Art of the United States and Europe since World War II in critical and historical perspective, emphasizing the influence of social movements on artistic thought and expression. Topics include the impact of technology and popular culture, the subversion of the traditional boundaries between arts, the rejection of the object, and the rise of pluralism. **CC:** LCC, HUM **ISP:** AMS

AAH 380 - The Floating World: Edo Prints and Printmaking

Course Units: 1.0 This course was previously a Studio-Art History mix, but now it is strictly Art History. Ukiyo-e, or "floating-world pictures," depict the urban pleasures and escapes offered in Japan's modern imperial capital of Edo (present-day Tokyo). The course will examine the history, production, and reception of ukiyo-e woodblock prints from the 17th-20th centuries, covering traditional ukiyo-e, updates during the Meiji period (1868-1912), and then Shin Hanga and Sosaku Hanga movements into the 1950s. Themes to be explored include: cityscapes, landscapes and travel; representations of beautiful men and women in bijinga; the theater and the Kabuki stage; encounters with the west; ghosts and demons; and erotic imagery. **Cross-Listed:** AVA 380 **CC:** LCC, HUM **ISP:** AIS

AAH 390 - The Art Museum: History, Theory, and Practice

Course Units: 1.0 This upper-level course takes the art museum as its subject. It will examine the history of the art museum and its roots in late 18th century ideas about knowledge, display, and democratic politics, and trace the growth of the art museum over the course of the 19th and 20th centuries in the context of changing cultural notions of "the public," philanthropy, and modernist and avant-garde art practice. The course will be supplemented by visits to local art museums. This course also serves as a prerequisite to TAB 336T: Three Weeks in the Louvre. **CC:** HUM

AAH 440 - Seminar: Special Topics in Art History

Course Units: 1.0 Writing-intensive, research-oriented, discussion-based seminar that involves comparative methodologies; designed principally for majors. Topics vary. **CC:** HUM, WAC/S

AAH 490 - Art History Independent Study 1

Course Units: 1.0

AAH 491 - Art History Independent Study 2

Course Units: 1.0

AAH 492 - Art History Independent Study 3

Course Units: 1.0

AAH 493 - Art History Independent Study 4

Course Units: 1.0 **(TBD: Staff)**

AAH 495 - Museum Internship 1

Course Units: 1.0 Students who have largely fulfilled the requirements for a concentration in art history may be able to intern at the Albany Institute of History and Art, the Hyde Collection, the Schenectady Museum, other regional museums, or the National Buildings Museum in Washington, D.C. The latter is offered in conjunction with Union's spring term in Washington, D.C. Permission of the Chair required.

AAH 496 - Museum Internship 2

Course Units: 1.0 Students who have largely fulfilled the requirements for a concentration in art history may be able to intern at the Albany Institute of History and Art, the Hyde Collection, the Schenectady Museum, other regional museums, or the National Buildings Museum in Washington, D.C. The latter is offered in conjunction with Union's spring term in Washington, D.C. Permission of the Chair required.

AAH 498 - Art History Senior Thesis 1

Course Units: 0.0 Part 1 of a 2 term thesis; grades pass/fail.

AAH 499 - Art History Senior Thesis 2

Course Units: 2.0 Two term credits when completed. **CC:** WS

Accounting

ACC 100 - Intro to Accounting

Course Units: 1.0 A survey of selected topics within various areas of accounting, such as managerial accounting, financial accounting, and tax accounting. Emphasis will be on concepts and not on record-keeping.

Dance

ADA 010 - Ballet 1

Course Units: 0.0 An introduction to the basic techniques of classical ballet. Each class incorporates proper body alignment, balance and self-awareness of the classical form. Students learn ballet technique and style by combining a barre warm-up, centre phrases, and across-the-floor combinations. **Prereq/Corequisite(s):** For beginner level.

ADA 011 - Ballet 2

Course Units: 0.0 This intermediate ballet level is designed for dancers who have been trained in the classical form. Class includes complex combinations at the barre and in the center. Musicality will be stressed as well as progressive combinations, physical control, and variations through turns, jumps, adagios and allegros. **Prereq/Corequisite(s):** For intermediate level.

ADA 012 - Ballet 3

Course Units: 0.0 This advanced ballet level emphasizes classical academic training as well as repertoire. Depending on student's ability and strength, pointe work will be added. Variations from contemporary or traditional ballets will be learned in class. Dancers who have a desire to perform are encouraged to attend. **Prereq/Corequisite(s):** For advanced level.

ADA 020 - Jazz Dance 1

Course Units: 0.0 An introduction to the basic technique and vocabulary of Jazz dance. Each class will incorporate dynamic body movements, flexibility, strength and coordination through center combinations and across the floor progressions. This class is danced to contemporary music. **Prereq/Corequisite(s):** For beginner level.

ADA 021 - Jazz Dance 2

Course Units: 0.0 The intermediate jazz class focuses on different styles such as the classical, funky and contemporary genres. The class offers technical progressions with an increased focus on quality of movement.
Prereq/Corequisite(s): For intermediate level.

ADA 023 - Broadway Dance

Course Units: 0.0 This class focuses on ensemble movements done in musicals. Students will learn a variety of numbers from shows including repertoire from both past and present productions. Broadway styles will include the work of famous choreographers such as Jerome Robbins, Michael Bennett, Bob Fosse and Twyla Tharp.
Prereq/Corequisite(s): For all levels.

ADA 030 - Modern Dance 1

Course Units: 0.0 This contemporary form focuses on gaining an in depth understanding of how the body moves, proper placement, alignment, and flexibility. This class explores different ways of using organic and creative movements, the floor and traveling through space. **Prereq/Corequisite(s):** For beginner level.

ADA 031 - Modern Dance 2

Course Units: 0.0 Delve into the dynamics, rhythms, phrasing, and use of space unique to contemporary dance while developing technical strength. This class will reinforce your physical possibilities and build your inner potential towards dance expression. **Prereq/Corequisite(s):** For intermediate level.

ADA 036 - Pilates for Performers

Course Units: 0.0 Students learn the basic, intermediate and advanced mat exercises from the Pilates Method of Body Conditioning as well as the principles and history of the Pilates Method and its founder, Joseph Pilates. Pilates works the whole body, emphasizing control, precision and concentration in both the mind and the body. The low impact nature of Pilates makes it ideal for injury prevention and rehabilitation. Specifically, the class focuses on techniques that strengthen the core, enhance flexibility and body placement and alignment. This class is an ideal training base for all performers, including musicians, athletes, dancers, actors and scholars. **Prereq/Corequisite(s):** For all students.

ADA 038 - Yoga Dance

Course Units: 0.0 This cross training class consists of Yoga warm ups, stretches and a series of choreographed flows and poses. Dancers will gain flexibility; improve strength and peace of mind in this therapeutic movement class. **Prereq/Corequisite(s):** For all levels.

ADA 040 - Afro-Dance

Course Units: 0.0 This is a course built for everyone who wants to experience African dance and rhythms. Classes will include a series of technique exercises, routines, and basic theoretical components of African and African-derived dance practices while building stamina, rhythm, and confidence. Students will participate in a cultural dance style and technique welcoming dancers of all levels into a rich range of African dance movements. **Prereq/Corequisite(s):** For all students.

ADA 041 - The Moving Body

Course Units: 0.0 This cross training dance class taught to music and contemporary dance vocabulary focuses on the study of muscular elongation and body awareness. Special emphasis on placement, strength, endurance and flexibility will enhance the practitioner's potential. Open to all interested in learning and experiencing the fundamentals of a physical discipline.

ADA 042 - Franklin Method

Course Units: 1.0 This movement class analyses daily actions, regiment of exercise and mental training to inform and empower impactful and efficient movement.

ADA 045 - Tap Dance 1

Course Units: 0.0 For all students who want to learn tap dance technique. This class focuses on the study of basic footwork, rhythms and combinations. **Prereq/Corequisite(s):** For beginner level.

ADA 046 - Tap Dance 2

Course Units: 0.0 This class explores intricate rhythms that will enhance the quality of tap sounds, speed and its vocabulary. Students with previous experience will be able to expand their expertise. **Prereq/Corequisite(s):** For intermediate level.

ADA 051 - Rehearsal and Production

Course Units: 0.0 Students are invited to participate in dance productions in a variety of capacities, both on-stage and off-stage. **Prerequisite(s):** By Dance Director's invitation

ADA 054 - Flamenco

Course Units: 0

This course seeks to introduce dancers to the fundamentals of flamenco dance through the lens of American modern dance. Exercises from Martha Graham and Katherine Dunham technique will be used interchangeably to access important aspects of flamenco dance including rhythm, syncopation, spiral, contract/release, communal energy, body centering, swing, arm and footwork in flamenco. Every class will include exercises on the floor and standing positions exploring full movement of the body- brazos (arms) and footwork (zapateado). Students will be encouraged to compose their own flamenco solos to be performed in improvisation as well as master steps for a flamenco dance. Movements from Alegrias, Tangos, and other flamenco dances will be taught throughout the course. Discussion of the politics of gender and race within flamenco will occur in relation to movement as it is performed. Hard soled shoes are recommended for the flamenco footwork section of each class. A long ankle length skirt is useful to access some classical flamenco movements as well.

ADA 060 - Hip Hop 1 Dance Class

Course Units: 0.0 This class gives students the opportunity to learn the basics of the hip hop form, based on routines from street jazz, voguing, social and fundamental hip hop. This style gives students a way to gain strength, body awareness and dance skills to today's hip hop music. **Prereq/Corequisite(s):** For all students.

ADA 061 - Hip Hop 2 Dance Class

Course Units: 0.0 This intermediate class provides dancers with a high energy, and innovative dance style. Hip Hop is urban, it's diverse, and it's forever changing. **Prereq/Corequisite(s):** For intermediate level.

ADA 070 - Choreography - Modern

Course Units: 0.0 This creative class gives students the opportunity to focus on a particular theme or concept to generate choreographic material. The dance piece will aim to produce a contemporary vision that will be presented as part of the Winter Dance Concert. **Prereq/Corequisite(s):** For intermediate level.

ADA 071 - Choreography - Jazz

Course Units: 0.0 This class works toward the composition of innovative dance movements found in the contemporary jazz form. Students explore a wide variety of movements as a mean of self-expression. The finalized choreography will be presented as part of the Winter Dance Concert. **Prereq/Corequisite(s):** For intermediate level.

ADA 072 - Choreography - Ensemble

Course Units: 0.0 This class concentrates on creating choreography that allows the opportunity to collaborate and strive for group impact on stage. Choreographic material will be presented as part of the Winter Dance Concert series. **Prereq/Corequisite(s):** For intermediate level.

ADA 073 - Choreography - Rhythms

Course Units: 0.0 This practicum focuses on developing various rhythms to create vibrant sounds for a challenging choreography. The exploration of dynamic tap steps will be presented in the Winter Dance Concert series. **Prereq/Corequisite(s):** For intermediate level.

ADA 074 - Choreography - Ballet

Course Units: 0.0 This choreography class emphasizes either the traditional or contemporary ballet vocabulary. Dancers will be involved in a creation that embraces their expertise. This piece will be presented in the Winter Dance Concert series. **Prereq/Corequisite(s):** For intermediate level.

ADA 130 - The Dance Experience

Course Units: 1.0 This exploratory course introduces the many facets of the art of making dances. Through lectures, workshops and performances, students discover choreographic tools, new dance vocabulary and inner skills. Special emphasis on creative abilities, built on trust, and performances. Students work as choreographers in individual and collective dance pieces to be performed publicly at the Steinmetz Symposium and An Intimate Afternoon with Dancers. **CC:** HUM

ADA 140 - American Musical Theater and Dance

Course Units: 1.0 This course is an introduction to the American Musical from Vaudeville and Minstrel Shows to today's contemporary Broadway shows. Through lectures, video viewing, and workshops, students learn the historical background that focuses on the work of lyricists, composers, dancers, singers, choreographers, directors and producers. This unique American entertainment art form reflects American diversity and culture, changing times, values and trends. **Cross-Listed:** ATH 140 **CC:** LCC, HUM **ISP:** AFR, AMS

ADA 142 - Dance in America

Course Units: 1.0 An introduction to dance in America from Native American to contemporary diverse styles, approached through lecture, video viewing, and dance workshops. A voyage through time from the French Court with the birth of Classical Dance through the twentieth century with the development of Modern and Post-Modern Dance. Study of the advent of new music and dance with the African American heritage and American contributions towards social dancing. Special emphasis on historical background and international influences, studying the dancers, choreographers, traditions, and trends that influence the making of contemporary dance as an art and form of expression. **CC:** LCC, HUM **ISP:** AFR, AMS

ADA 143 - Introduction to Circus Arts

Course Units: 1 Circus has long had the power to incite marvel, to elicit gasps of wonder, to shout out its own magical place in our imagination, and to inspireboth Wanderlust and belonging: it is, after all, an art that calls for us to run away with it. This course offers a close examination of some of this power. We will come to understand circus more fully as an art, with its own histories, forms, and practices, even as we look carefully and critically at its role as a cultural phenomenon across time and places. **CC:** HUM, WAC, JCAD

ADA 150 - Staging Exploration in Theater and Dance

Course Units: 1.0 This course is based on the close examination of a particular period or theme of multidisciplinary artistic production that offers students an immersion into important developments in performative expressions. This course explores dynamic movements in the artistic avant-garde, its historical background, and its principal creators in theater, dance and associated performing arts, through discussions, lectures, studio work, and collaborative creation. The resulting exploration is produced and performed at the Winter Dance Concert series. **Cross-Listed:** ATH 150 **CC:** HUM, GCAD

ADA 153 - Histoire de la danse, Danse de l'histoire/History of Dance, Dance of History

Course Units: 1.0 Examination of Western European dance and dance texts as revelatory of broader historical and cultural patterns, with special analyses of dance as a key tool of nation building (as with the court of Louis XIV) and/or a central medium of artistic creation (as in 1920's Paris). Primary focus on France as creator, user, and potential abuser of dance's power, but some attention given other European models (Berlin, St. Petersburg, London). Readings from theoreticians, historians, and dance litterateurs (Moliere, Gautier, Cocteau). **Cross-Listed:** FRN 421 and MLT 211 **CC:** HUL, LCC **ISP:** REE

ADA 160 - Dance for the Camera

Course Units: 0.0 This course focuses on the process of making dances for the camera, uniting the various aesthetics of movement and the practical elements of recording visual material. Since the arrival of the digital chip, the light camera, and various computer programs, we have seen a revolution in dances created for the screen, Slideroom, YouTube or Vimeos. Methods will focus on conceptualized movement, phrase development, compositional tools and framing, as well as design production. Through discussions, decision-making, individual and collaborative work, the designated choreographer/director, crew and camera person will develop a sense of craft used in the art of making dances for video viewing. The student challenge will be to invent a unique dance language to communicate ideas, intentions and feelings through the medium of video making. Dance moves - with their complexity, richness, rhythmical and compelling imagery - will be at the core of their creative work. **CC:** HUM

ADA 295H - Choreography Honors 1

Course Units: 0.0 This course seeks to develop students' choreographic potential through research and exploratory exercises. Methods focus on concept, phrase development, compositional tools, design and artistic presentation. Through discussions, decision-making, individual and group work, the choreographer develops a sense of craft used in the art of making dances. A weekly dance technique class is required. **Prerequisite(s):** ADA 130 Dance Experience or by Dance Director's permission. **CC:** HUM

ADA 296H - Choreography Honors 2

Course Units: 1.0 Students create choreography and work in collaboration with dancers, designers or any inter-disciplinary artists to fulfill their creative objectives. The final dance piece is presented publicly in the Dance Concert series (winter) or Steinmetz Dance Performance (spring). A weekly dance technique class is required. **Prerequisite(s):** ADA 295H **CC:** HUM

ADA 350 - Choreography

Course Units: 1.0 This course emphasizes the creation of a dance piece in collaboration with selected dancers, designers (costumes, props or projections), musicians or any interdisciplinary artists. Students must create a group choreography that will be innovative, express their own style, a specific theme or concept. Students will act as artistic directors, overseeing their creation and being in charge of their collaborators. Their choreography will be presented either in the Winter Dance Concert series or at the Steinmetz Symposium. A weekly technical dance class is required. **Prerequisite(s):** ADA 130 **CC:** HUM

ADA 370 - Dance Internship

Course Units: 1.0 As a professional work/study experience, students can elect to pursue a specific area of interest in a one-term internship with a professional dance company. The precise form of this project will vary with the student and area of focus, but may include production, performance, management, or administrative work in the field or other

projects approved by the Dance Director. Appropriate credit is granted upon completion of the internship. This course will be taken Pass/Fail. Appropriate advisement and guidance will be available to the student. **Prerequisite(s):** Minor in Dance.

ADA 490 - Dance Project 1

Course Units: 1.0 Students can elect to pursue a specific area of study. Subjects might include researching dance styles or techniques, a choreographer or dancer's life and achievements, a dance craze as well as creating a specific dance piece. Their research can be presented through workshops, the restaging of a masterpiece or the creation of a dance piece, the making of a dance film or documentary.

ADA 491 - Dance Project 2

Course Units: 1.0 Students can continue pursuing a specific area of study. Subjects might include researching dance styles or techniques, a choreographer or dancer's life and achievements, a dance craze as well as creating a specific dance piece. Their research can be presented through workshops, the restaging of a masterpiece or the creation of a dance piece, the making of a dance film or documentary.

ADA 492 - Dance Project 3

Course Units: 1.0 Students can create their own dance project that could extend to volunteer work in the community, including workshops in schools and centers and get involved in dance presentations or choreographic work outside Union premises. .

GPM 354T - WMC Balinese Performing Arts Mini-term

Course Units: 1.0 This mini-term focuses on the study of the performing Arts of Bali. Students will have daily group instruction with Masters Performers of gamelan (the Balinese orchestra of gongs and xylophones) and dance, as well as additional lessons in an art form one's choosing (e.g. painting, drumming, mask making, etc.). This instruction will culminate in a final performance. Students will also visit many important artistic and ritual locations, attend professional shows and meet with local Balinese people in a variety of contexts. No previous experience is required. **CC:** LCC

Africana Studies

AFR 100 - Introduction to Africana Studies

Course Units: 1.0 An interdisciplinary introduction to the field of Africana Studies. This course will examine the issues and perspectives-social, economic, political, historical, and cultural-of the peoples of Africa and the African diaspora. **CC:** LCC **ISP:** AIS, AMS, LAS

AFR 295H - Africana Studies Honors Independent Study 1

Course Units: 0.0

AFR 296H - Africana Studies Honors Independent Study 2

Course Units: 1.0

AFR 490 - Africana Studies Independent Study 1

Course Units: 1.0 **ISP:** AFR

AFR 491 - Africana Studies Independent Study 2

Course Units: 1.0

AFR 498 - Africana Studies Senior Thesis 1

Course Units: 0.0 **ISP:** AFR

AFR 499 - Africana Studies Senior Thesis 2

Course Units: 2.0 **Prerequisite(s):** AFR 498 **CC:** WS **ISP:** AFR

American Studies

AMS 251T - Washington D.C.: Cultural and Political Spaces in America's Capital

Course Units: 1.0 This course focuses on the ways Washington, D.C. residents, writers, politicians and critics have defined the nation's capital, exploring the dichotomy between Washington as the "lived" city, with that as the nation's public capital (and spectacle). The course examines the racial and class shifts over the last century in its residential space, its recent rapid gentrification, and the dramatic racial and class divide in both living space and working space. Moreover, the public space, such as presidential monuments, war memorials, federal museums, the White House, the Library of Congress, the Supreme Court, and the Mall are contentious political spaces as well as symbolic spaces for tourists viewing the "values" of the United States. **CC:** HUM, Does not get LCC credit; term-abroad course not outside the United States.

AMS 498 - American Studies Senior Thesis 1

Course Units: 0.0

AMS 499 - American Studies Senior Thesis 2

Course Units: 0.0 **CC:** WS

Asian Studies

AIS 232 - "From Bombs to Buddhism: Fatalism, Technology, and Modern Japanese Culture"

Course Units: 1 An exploration of Japanese culture through critical engagement with mixed media including classic literature, historical accounts, contemporary fiction, music, manga, anime, and film. Throughout the course, students

will question what religious beliefs, natural disasters, historical events, and technological advancements have shaped Japanese creative expression, which, in turn, will deepen their understanding of contemporary Japanese society. Students will also have the opportunity to explore their own creativity in a variety of projects. **CC:** LCC, SOCS, WAC **ISP:** AIS, REL

AIS 295H - Asian Studies Honors Independent Project 1

Course Units: 0.0

AIS 296H - Asian Studies Honors Independent Project 2

Course Units: 1.0

AIS 490 - Asian Studies Independent Study 1

Course Units: 1.0

AIS 491 - Asian Studies Independent Study 2

Course Units: 1.0

AIS 492 - Asian Studies Independent Study 3

Course Units: 1.0 **Prerequisite(s):** AIS 491

AIS 498 - Asian Studies Senior Project 1

Course Units: 0.0 Interdisciplinary investigation of a topic in Asian Studies.

AIS 499 - Asian Studies Senior Project 2

Course Units: 2.0 Interdisciplinary investigation of a topic in Asian Studies. **CC:** WS

Music

AMU 010 - Instrumental and Vocal Lessons

Course Units: 0.0 Private lessons are offered in voice, keyboard, guitar, wind, string, brass, percussion and world instruments once a week at a cost of $540 per term. Scholarships are available by application to music majors, IDs, and minors with demonstrated need to offset the cost of lessons. For registration information and a list of approved instructors see Eugene Jin Byun, Director of Music Performance.

AMU 012 - Union College Japanese Drumming and Global Fusion Band

Course Units: 0.0 The Union College Japanese Drumming and Global Fusion Band (Zakuro-Daiko) rehearses weekly on a variety of Japanese drums and other types of global instruments. The ensemble regularly performs both on- and off-campus. No previous musical experience is required, though members need to audition/interview to determine participation at the discretion of the instructor. See Professor Matsue. **ISP:** AIS

AMU 014 - Union College Concert Choir

Course Units: 0.0 The Union College Concert Choir performs works from a broad chronological and stylistic range, including western and non-western traditions. The ensemble performs at least once each term and normally performs at one off-campus venue each year. This ensemble is open by audition to all students and prior experience is not necessary. See Eugene Jin Byun, Director of Music Performance.

AMU 015 - Union College Jazz Ensemble

Course Units: 0.0 The Union College Jazz Ensemble meets weekly and performs throughout the year in both formal and informal settings. Experience in improvisation is desirable but not required. Instrumentalists and vocalists are welcome to audition. See Professor Olsen.

AMU 016 - Union College Schola Cantorum

Course Units: 0.0 The Union College Schola Cantorum is a select vocal ensemble that performs music from a span of five centuries. The ensemble performs one concert a year.

AMU 017 - Union College and Community Orchestra

Course Units: 0.0 The Orchestra meets once a week and presents at least one concert each term. The Orchestra is open by audition to all students and members of the community. Section and principal chairs are assigned according to the audition results. See Eugene Jin Byun, Director of Music Performance.

AMU 018 - Union College Early Music Ensemble

Course Units: 0.0 The Union College Early Music Ensemble, open to both singers and instrumentalists, is devoted to the study and performance of music from the Middle Ages through the Early Viennese Era. Participants play on both modern instruments and reproductions of historic instruments, including the harpsichord. Emphasis is placed upon historical performance practices, as described in music treatises and other documents and as understood by scholars and performers today. The Ensemble, open by audition, rehearses twice a week. See Professor McMullen.

AMU 100 - Elements of Music

Course Units: 1.0 An introductory survey of the main aspects of music theory and practice including rhythm, intervals, scales and keys, melody, harmony, and form, complemented by hands-on creative work in the Music Technology Studio. Designed for students with a minimal background in music **CC:** HUM

AMU 101 - Music Theory: Materials and Design I

Course Units: 1.0 This course is an introduction to concepts in music theory that enable musicians to analyze, compose, perform, and think more critically about the elements of music. Through academic inquiry and creative application, students will develop a deeper understanding of the materials that underpin music, including melody, harmony, voice leading, rhythm, texture, phrasing, and form. Students will gain insight into how composers design and construct music and then apply those techniques to their own composition assignments and projects. **Prerequisite(s):** Ability to read music or permission of the instructor. **CC:** HUM

AMU 110 - Class Piano 1

Course Units: 1.0 This course, aimed at students with no experience in piano playing, integrates basics of music theory with learning to play the piano. Students will first learn to read treble and bass clefs at the keyboard and then come to an understanding of keys and basic harmonic principles while learning to play music from a variety of repertoires. **CC:** HUM

AMU 111 - Class Piano 2

Course Units: 1.0 A continuation of Class Piano I. Students learn to perform intermediate-level piano works from classical and popular music repertoires, develop sight reading skills, and learn to harmonize melodies with more than three chords. **Prerequisite(s):** AMU 110 or permission of the instructor. **CC:** HUM

AMU 120 - Making Music, Shaping Selves: Introduction to World Music

Course Units: 1.0 Introduces music from various world areas including Africa, Latin America, Asia, and Europe through live performance, lecture, video and audio. Students will increase familiarity with a wide range of musical styles while also exploring the relationship between music, identity and society. **Cross-Listed:** ANT 148 **CC:** LCC, HUM

AMU 125 - World Religions and Music

Course Units: 1.0 Music, deemed by some to be a gift from the Divine, continues to play an important role in the histories of all religions. Through an examination of three religions - Buddhism, Judaism, and Christianity - students will come to an understanding of the intricate relationships among music, theology, liturgy, ritual, and human religious expressions in different cultures and at different time periods. **CC:** HUM, LCC **ISP:** REL

AMU 130 - American Music

Course Units: 1.0 American music-cultures approached through performance, lecture, video, and audio. Survey samples from popular, classical, and folk traditions. **CC:** HUM

AMU 131 - Music of Black America

Course Units: 1.0 Black music in America from its African beginnings to present-day pop styles, approached through live performance, lecture, video, and sound recordings. Special emphasis on gospel, blues, jazz, and rap. **Prereq/Corequisite(s):** Not open to students who have taken AMU 132. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AFR, AMS

AMU 132 - The History of Jazz

Course Units: 1.0 A study of the important personalities and trends in the evolution of jazz, approached through reading, video and sound recordings, and live performance. **Prereq/Corequisite(s):** Not open to students who have taken AMU 131. **CC:** LCC, HUM **ISP:** AFR, AMS

AMU 133 - Music of Latin America

Course Units: 1.0 Latin American music-cultures approached through live performance, lecture, video, and audio. Survey samples from folk, popular, and classical traditions, with special emphasis on the musics of Cuba and Brazil. **CC:** LCC, HUM **ISP:** AFR, LAS

AMU 134 - Music and Culture of Africa

Course Units: 1.0 Through an examination of traditional and popular music from across the continent, students will gain a better understanding of the integral role played by music in African culture. **CC:** LCC, HUM, JCAD, JCHF **ISP:** AFR

AMU 140 - Music Technology I: Transforming Sound, Making Music

Course Units: 1.0 An introduction to the tools and techniques of organizing sound in meaningful ways using computers. Students learn basic recording techniques, audio editing, mixing, sequencing, synthetic sound design, and basic compositional techniques in order to facilitate the creation of original, brief compositions.

AMU 160 - From Chant to Mozart

Course Units: 1.0 A study of compositions from the ninth century through the time of the French Revolution. Among the many topics included are Gregorian chant, music for kings and queens from the Renaissance, the effect of the Reformation and Counter-Reformation on music; the invention of opera (the predecessor of the musical); Vivaldi's concertos, sacred music by Bach and Handel; and symphonies and operas by Haydn and Mozart. This course is not intended for music majors. **CC:** HUM, JCAD, JCHF, JLIT, WAC **ISP:** REL

AMU 161 - From Beethoven to Bernstein

Course Units: 1.0 A study of compositions from the end of the eighteenth century through the present. A few of the composers we study are Beethoven, Chopin, Mendelssohn, Schubert, Clara and Robert Schumann, Wagner, Brahms, Debussy, Stravinsky, Schoenberg, Ives, Copland, Varese, Bernstein, and John Adams. This course is not intended for music majors. **CC:** HUM, WAC, JCAD, JCHF, JLIT, WAC **ISP:** REE

AMU 201 - Music Theory: Materials and Design II

Course Units: AMU 201 delves deeper into melody, harmony, and voice leading, with a particular focus on modulation and chromaticism. This course touches on a broad spectrum of topics, including melodic phrasing, tonicization and modulation, chromatic voice leading, and an expanded harmonic vocabulary. Through the analysis of classical, jazz, and popular music, this course encourages students to explore and understand the application of these concepts in various musical genres. **Prerequisite(s):** AMU 101 or permission from the instructor. **CC:** HUM

AMU 202 - Musical Thinking: World and Pop

Course Units: 1.0 This course will examine music traditions outside the canon of Western classical music, including American folk, jazz and popular music as well as traditional and popular music from around the world. In order to better understand the theory and practice of these music's, students will pursue topics including the dichotomy between oral tradition and written notation; various ways of organizing pitch, rhythm, and meter; and the process of transcription. **Prerequisite(s):** AMU 100 or AMU 101 or permission of the instructor. **CC:** HUM, LCC

AMU 212 - Bach, Handel, and their Predecessors

Course Units: 1.0 This course is a study of music composed between about 1600 and 1750. Among the topics that we explore are: recently discovered compositions by underrepresented figures such as Manuel del Surmaya of Mexico; works influenced by architecture; connections between various styles of opera and the modern-day musical; the impact of dance rhythms on vocal and instrumental music; and the role of improvisation on the one hand and strict counterpoint on the other in the development of music from the seventeenth and early eighteenth centuries. **CC:** HUM, HUL, LCC, WAC-R, JCAD, JCHF, JLIT, **ISP:** REL

AMU 213 - Haydn, Mozart and Beethoven

Course Units: 1.0 Vienna was the center of European art music from the late eighteenth century through the early nineteenth century. This course examines music by Haydn, Mozart, Beethoven, and underrepresented composers such as Joseph Bologne. A thread throughout the course is a discussion about class struggles as seen through the lives of the composers, as well as through a close examination of the classic opera The Marriage of Figaro. Students come to an understanding of Vienna at one of the city's greatest musical heights. **CC:** HUM, JCAD, JCHF, JLIT, WAC

AMU 214 - Romanticism

Course Units: 1.0 The nineteenth century witnessed the development of countless individual musical styles, as opposed to the more homogeneous sounds of previous generations. Through listening exercises, studies of texts and music, and historical documents, students learn to distinguish characteristics of music written by composers such as Chopin, Schubert, Clara and Robert Schumann, Felix and Fanny Mendelssohn, Bizet, Verdi, Wagner, Brahms, Ethel Smythe, Amy Beach, Coleridge-Taylor, Gottschalk, and others. **CC:** HUL, JCAD, JCHF, WAC **ISP:** REE

AMU 215 - Music in the 20th & 21st Centuries

Course Units: 1.0 The study of significant styles and developments in the music of the last hundred years (both "classical" and popular), approached through analysis, performance, and composition. **Prerequisite(s):** AMU 101or permission of the instructor. **CC:** HUM **ISP:** REE

AMU 220 - Mapping Musical Lives: Ethnography of Performing Arts

Course Units: 1.0 This seminar explores the relationship between music and culture through live performance, discussion, video and audio, and workshops in a variety of world music areas. Students will also consider how one conducts research on performing arts, culminating in a focused project on music-making in the community. Students thus will encounter diverse peoples and their musical practices in cross-cultural comparison while also exploring research methodology through their own work. **Cross-Listed:** ANT 274 **CC:** LCC, HUM, JCHF, JSPE, WAC-R **ISP:** REE

AMU 221 - From Rhythm and Blues to Radiohead: The History of Rock & Roll

Course Units: 1.0 Explores the historical development of Anglo-American rock-and-roll through lecture, video and sound recordings. This course will rely heavily on film, with an accompanying series featuring documentaries, concert films, musicals and more. Students will gain a greater understanding of the socio-cultural contexts that informed stylistic change, as well as consider the continued relevance of rock today. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, JCHF, JCAD, WAC **ISP:** AMS, GSWS

AMU 223 - Global Hip Hop

Course Units: 1 Hip hop has grown from its late 1970s NYC roots to become a vehicle for self-expression around the globe. After introductory topics including the basics of music, an overview of the music industry, and the roots of hip hop, the course will examine case studies in global hip hop culture. **CC:** HUM, WAC-R, JCAD, JCHF **ISP:** AFR

AMU 225 - Music as Activism

Course Units: 1 From Green Day's iconic American Idiot (2004) to the strumming of Middle Eastern lutes in Afghani refugee camps-music is an integral means of expressing individual and collective identity, critiquing injustice, and inspiring action. This course explores what forms such activism take and how music and the arts increase awareness of

real social and environmental problems and potentially help resolve conflicts. Both through theoretical arguments and concrete case studies, we will see that music-and the individuals who make it-are able to enact real positive social change. **CC:** HUM, JCHF, JSPE, WAC-R

AMU 230 - Musical Theater & Opera Scenes Workshop

Course Units: 1.0 This class aims to help students discover their potential for singing, acting, and dancing through the performance of scenes from the opera and musical theater literature. Special emphasis will be given to the improvement of sight-reading. Through a combination of lecture and hands-on performance, students will also learn to understand the basics of voice types, vocal technique, and other performance-related issues in the field. Guest speakers and instructors will be invited to share their experiences with students to further their understanding of the vocal performance industry. **CC:** HUM **ISP:** AMS

AMU 231 - Chamber Music Workshop

Course Units: 1.0 Rehearsal and performance of chamber music primarily from Classical and Romantic periods. **CC:** HUM

AMU 232 - Jazz Workshop

Course Units: 1.0 Students will perform, analyze, and compose music written in jazz idioms; students will develop skills in improvisation. **CC:** HUM

AMU 233 - Japanese Drumming Workshop

Course Units: 1.0 This course introduces Japanese drumming, exploring its origins and subsequent development as a national art form following WWII, and then its ultimate spread globally as a voice of Asian-American activism. The course emphasizes performance on the drums and culminates in a final concert and performance project. No previous musical experience is required. **CC:** LCC, HUM, JCAD, JCHF, JSPE **ISP:** AIS, GSW

AMU 234 - Balinese Gamelan Workshop

Course Units: 1.0 This course introduces Balinese music and culture, exploring the importance of music, dance, and religion in the everyday life of Balinese people. The course emphasizes performance of Balinese gong kebyar (an orchestral form featuring xylophones, gongs, drums, and cymbals) and culminates in a final concert and performance protest. No previous musical experience is required. **CC:** LCC, HUM **ISP:** AIS

AMU 235 - Latin Percussion Workshop

Course Units: 1.0 The goal of this course is to give students an in-depth understanding of Afro-Cuban and Afro-Brazilian music through studying genres (rumba, son, mambo, salsa, comparsa, samba, forro) from inside the percussion section. In addition to ensemble work, students will research and transcribe Latin music styles. The course will culminate in a public performance/presentation at the end of the term. Entry to the course by audition; previous instrumental experience desirable but not required. **CC:** LCC, JCAD, JCHF **ISP:** AFR, LAS

AMU 240 - Music Technology II: Recording and Mixing Sound

Course Units: 1 This course focuses on the hardware and software tools, techniques, and practices necessary to produce polished pieces of music. Through both technical and creative projects, students dive deeper into concepts from

acoustics and psychoacoustics, microphone placement and selection, recording practices, signal routing, sound processing and mixing, and synthesizer programming. **CC:** HUM

AMU 245 - Sonic Storytelling: Scoring for Film and Media

Course Units: 1 AMU 245 is an introduction to the artistic and technical foundations of scoring music for film and media. The course is designed to give students a set of skills to conceptualize, synchronize, and compose music for moving images. We will have discussions centering on the relationships between music, sound, narrative, and aesthetics and workshops demonstrating the hardware and software tools available for scoring. **Prerequisite(s):** AMU 101 or AMU 140 **CC:** HUM **ISP:** FLM

AMU 246 - What Does Data Sound Like?

Course Units: This is an introduction to the field of data sonification, a creative and innovative approach to understanding and communicating by translating data into sound. It goes beyond traditional data visualization methods, offering unique insights and perspectives on datasets from a variety of sources. Students will explore a broad spectrum of interdisciplinary applications, ranging from the practical to the technical to the creative. Through lectures, discussions, and labs, students will gain an understanding of the principles of data sonification and its applications in the modern world. **Cross-Listed:** ECE 246

AMU 250 - Soundscapes

Course Units: 1 This course explores the interdisciplinary field of soundscape studies and acoustic ecology through reading, discussion, listening exercises, and written reflections. Students will encounter contemporary sound artists and the ways they have creatively engaged with the environment. Students will listen closely to, record, and analyze local soundscapes using field recording equipment, which will culminate in the creation of their own soundscape compositions. **CC:** WAC

AMU 280 - Baroque Music Performance

Course Units: 1 **CC:** WAC

AMU 295H - Music Honors Independent Project 1

Course Units: 0.0

AMU 296H - Music Honors Independent Project 2

Course Units: 1.0 **Prerequisite(s):** AMU 295H

AMU 301 - Music Theory: Materials and Design III

Course Units: 1 Through score analysis and composition, this course goes further into the characteristics that define common musical forms. Students explore concepts in texture, timbre, orchestration, and longer form composition. **Prerequisite(s):** AMU 201 **CC:** HUM

AMU 303 - Conducting

Course Units: 1.0 Fundamentals of conducting vocal and instrumental ensembles, including score reading and preparation, beat patterns, gestures, and rehearsal techniques. **Prerequisite(s):** permission of the instructor. **CC:** HUM

AMU 304 - Composition and Performance Projects

Course Units: 1.0 The creation and notation of freestyle compositions with emphasis on individual instruction. **Prerequisite(s):** AMU 201 or permission from the instructor. **CC:** HUM

AMU 305 - Vocal Arranging

Course Units: 1.0 Writing and arranging for the voice, in folk, classical, jazz, and popular contexts. **Prerequisite(s):** AMU 101 or permission of the instructor. **CC:** HUM

AMU 306 - The Evolution of Popular Song

Course Units: 1.0 From minstrelsy and vaudeville through Tin Pan Alley, Motown, the Beatles, Burt Bacharach, Billy Joel, and Taylor Swift, this course will examine the creation, performance, transmission, and reception of popular song. In addition to analyzing lyrical/musical content as well as historical context, students will compose words and music in the styles of established master songwriters. **Prerequisite(s):** AMU 101 or permission of the instructor. **CC:** HUM

AMU 307 - The Art and Music of Radiohead

Course Units: 1.0 Course Units: 1.0 This course focuses on the music and art of seminal rock group Radiohead. Formed in the 1980s in Oxfordshire, UK, Radiohead has released nine critically acclaimed studio albums and more than 40 music videos, topping thecharts for decades, and rivaling The Beatles for a top spot in the pantheon of British rock legends. They are widely respected not only for their musical innovation, involving creative modality and rhythmic organization but their ecological mindfulness, political edginess and industry changing approaches to the production of popular music, ever critical of consumer capitalism. This combination has allowed the group to maintain creative autonomy and authenticity, while garnering worldwide recognitionand commercial success. The group's emergence from British synth-pop and evolution to contemporary icons will be explored
through reading, listening, musical analysis, and video. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, GCHF, GCAD, GLIT, WAC

AMU 320 - Encounters with East Asian Music Cultures

Course Units: 1.0 Through live performance, discussion, and composition, this course explores key characteristics of East Asian Music Cultures. Particular attention is paid to the processes of cultural exchange between China, Korea, Japan and the rest of the world that have resulted in the rich breadth of performance traditions expressed today. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AIS, GSW

AMU 325 - Music, Community Engagement, and Sustainable Instruments: A Service-Learning Course

Course Units: 1 Music, Civic Engagement, and Sustainable Instruments is a service learning course that allows students to engage with the local Schenectady community by partnering with the Mont Pleasant Middle School 21st Century Afterschool Program; explore sustainable design, such as upcycling found objects into new sound producing instruments or related artistic objects; and collectively explore and expand your own ability to enact positive social change through your academic pursuits and beyond. **CC:** HUM, GCHF, GCAD, GSPE

AMU 340 - Early Music Seminar: Music of the Middle Ages and Renaissance

Course Units: 1.0 While distant in time, music of the Middle Ages and Renaissance resonates with modern times. Students learn how court musicians, monks, jongleurs, and others dealt with topics that still matter today - from love to war - only in different musical languages. Through individual analyses of texts and music, active listening exercises, classroom discussions, papers, performances, and projects, students explore the lives of people living between the ninth through the sixteenth centuries. **CC:** HUL, HUM, WAC, JCAD, JCHF, JLIT **ISP:** REL

AMU 490 - Music Independent Study 1

Course Units: 1.0

AMU 491 - Music Independent Study 2

Course Units: 1.0

AMU 492 - Music Independent Study 3

Course Units: 1.0

AMU 497 - Music One Term Senior Project

Course Units: 1.0

AMU 498 - Music Two Term Senior Project 1

Course Units: 0.0

AMU 499 - Music Two Term Senior Project 2

Course Units: 2.0 **Prerequisite(s):** AMU 498 **CC:** WS

Anthropology

ANT 110 - Introduction to Cultural Anthropology

Course Units: 1.0 The basic concepts, methodology, and findings of cultural anthropology. Examines the similarities and diversity of human societies through in-depth case studies and cross-cultural comparisons. **CC:** LCC, SOCS, JCHF, JSPE

ANT 111 - Cultures Through Film

Course Units: 1.0 This course explores other cultures as they are portrayed in ethnographic and documentary film. The course introduces students to ethnographic film and to the broad range of cultures and issues that are the subjects of these films. **CC:** LCC, SOCS, JCAD, JCHF, JSPE

ANT 130 - Food and the Self

Course Units: 1.0 What is the relationship between food and the body? What are the boundaries of food and the body? Are you what you eat or how you eat? This course looks at anthropological approaches to eating, consumption,

identity, the body and food, while also examining current controversies such as obesity, genetically modified foods, and food taboos. While much of the course concerns itself with the cultural and historical construction of the American diet, it also draws examples from other cultures. **CC:** LCC, SOCS

ANT 131 - Anthropology of Consumption

Course Units: 1 **CC:** LCC, SOCS

ANT 148 - Making Music, Shaping Selves: Introduction to World Music

Course Units: 1.0 Introduces music from various world areas including Africa, Latin America, Asia, and Europe through live performance, lecture, video and audio. Students will increase familiarity with a wide range of musical styles while also exploring the relationship between music and society. **Cross-Listed:** AMU 120 **CC:** LCC, HUM, SOCS

ANT 170 - Myth, Ritual and Magic

Course Units: 1.0 This course examines some of the theoretical issues surrounding myth, ritual and magic as well as specific examples of their cultural expression. How do people make sense of themselves, their society and the world through myth and ritual? How do cosmology and belief systems help them gain and organize knowledge about the world and themselves? The course will be examining a number of "occult" and "esoteric" practices, that is, practices that were not commonly known to all members of society, including sufism, kabbalah, alchemy, and shamanism. **Cross-Listed:** REL 170 **CC:** LCC, HUM, SOCS **ISP:** REE

ANT 181 - Anthropology of Sub-Saharan Africa

Course Units: 1.0 This course offers an ethnographic and ethnological survey of the diverse peoples and cultures of sub-Saharan Africa. To gain insight into the lives and experiences of peoples from across the region, we will examine both historical and contemporary forces that continue to shape political, economic, and sociocultural development. The course is organized thematically around a series of readings that give students an overview of the continent, its history and key topics in African anthropology. Anthropological approaches will be used to understand many of the challenges and innovations experienced across sub-Saharan Africa, including political conflict and democratization, development dilemmas, disease etiologies and witchcraft, popular culture, urbanization and environmental conservation. Through lectures, course readings, and discussions, students will enhance their knowledge of both Africa and anthropology. **CC:** LCC, SOCS **ISP:** AFR

ANT 184 - Contemporary Japanese Society

Course Units: 1.0 An anthropological introduction to contemporary Japanese society and culture. Provides an historical overview, then explores in greater depth such topics as family structure, education, religious traditions, the work place, women, and contemporary social problems. **CC:** LCC, SOCS **ISP:** AIS, GSWS

ANT 205 - Men and Masculinity

Course Units: 1.00 This course examines the construction of gender through the study of men and masculinity. The primary focus of gender studies has been on women and femininity but in recent decades scholars have increasingly emphasized that gender is a relational construct and cannot be understood without also examining men and masculinity. In this course we examine how male roles are defined across societies and how men must live up to and abide by different ideals of masculinity. Understanding this gives us insign into crucial social issues related to family, religion, politics and economy. **CC:** LCC, SOCS, JCHF, JSPE

ANT 210 - The Anthropology of Poverty

Course Units: 1.0

This course places students in internships in local organizations dealing with poverty for several hours each week. In class, we use this experience to reflect on larger debates about poverty in the US. Why has urban poverty remained so entrenched in the United States, even amidst the unprecedented economic expansion of the postwar period? This course will seek to answer this question by exploring the relationships between race, public institutions, economic change and inequality within American society. In doing so, the course will examine the theoretical and practical dimensions of anthropology's engagement with poverty. We will begin by examining theoretical approaches for understanding the persistence of poverty in the United States, as well as the major policy frameworks that seek to reduce poverty. In addition, the course will cover anthropological critiques of these approaches and anthropological accounts of the everyday realities and struggles of poor people.
CC: LCC, SOCS, WAC, WAC-R, JCHF, JSPE **ISP:** AMS

ANT 211 - Anthropology of Intimacy

Course Units: 1.0 Sex, love and marriage are all expressions of human intimacy, yet practices vary widely across societies. This course looks at universal needs for intimacy in cultural context. It begins with how men and women are defined culturally. Then it considers a range of sexual activities as societal demands or expressions of love. How does a given society define romantic love? How is homosexuality regarded? How does love magic work? Intimacy is steered through culturally defined roles, from sex workers to men playing the roles of women. Sexual antagonism sees men and women as dangerous to each other; how does love and marriage work in such societies? Marriage practices, from arranged marriage to marriage based on love, from polygamy to monogamy, all arise based on cultural demands as well. The course includes a look at romance and the emotional legacy of sexual assault on college campuses. **CC:** LCC, JCHF, JSPE **ISP:** GSWS

ANT 214 - Language and Culture

Course Units: 1.0 This course examines the complex relationship between culture and language. Lectures and readings will use case materials drawn from North America, Southeast Asia, the Caribbean, Oceania, and Europe to explore theories about how language is shaped by, and in turn shapes, culture and social relations. We will start by looking at the influence of linguistic categories on the way we view the world around us. We will look at color terminology, racial and ethnic categories, pronoun use, and differences in vocabulary used to talk about men and women. Next, we will turn to cultural differences in communicative behavior. We will examine theories that suggest that males and females, and members of various ethnic groups, use language differently in everyday social interaction. These differences in communicative strategies lead to systematic miscommunication and perpetuate stereotypes. We will then turn to the ways changes in communicative technologies such as the internet and cellphones change social relations. Finally, we will explore the ways that language reflects and supports social class, and the patterning of language use in multilingual nations. **CC:** LCC, SOCS, JCHF, JSPE

ANT 218 - Digital Anthropology

Course Units: 1 Digital anthropology investigates the dynamic interplay between culture, politics, and technology. It draws on a combination of theoretical texts and ethnographic methods to better understand the environments that digital technologies create and transform. **CC:** SOCS **ISP:** STS

ANT 220 - Women's Lives Across Cultures

Course Units: 1.0 Examines women's lives in different cultures through detailed case studies and film, focusing on common experiences (e.g., motherhood, work), gender-based inequality, and sources of women's power and influence.

It also examines topics that exclusively or disproportionately affect women (e.g., female genital cutting, domestic violence, rape, sex tourism) as well as the varied forms feminism takes in other cultures. **CC:** LCC, SOCS **ISP:** GSWS

ANT 221 - Law, Culture, and Society

Course Units: 1.0 Law is everywhere but it is not everywhere the same. How do diverse social, cultural and historical contexts shape the workings of law? This course introduces students to a series of critical perspectives about what law is and how it contours the fabric of everyday life. Students will learn how key legal issues such as dispute management, decision-making, and reconciliation are actualized in different settings. The ultimate goal of the class is to equip students with the tools to critically evaluate legal processes in multicultural and plural societies. The course begins with a consideration of customary practices and conflict resolution in non-Western societies and then looks at how anthropology helps us to understand law in contemporary societies. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** LAW

ANT 222 - Childhood in Anthropological Perspective

Course Units: 1.0 This course examines childhood across cultures. Lectures and readings will use case materials drawn from North America, Europe, Africa, Oceania, and Asia to explore ways in which culture affects how parents deal with children. We will also examine the acquisition of culture by young children. We will look closely at ways in which different cultural practices shape the experience of childhood from infancy to adolescence. Topics addressed will include: beliefs about infants, language acquisition, cultural differences in theories about learning, the nature of schools in various cultures, the role of play and mass media in shaping children, the cultural shaping of gender identity, and adolescent initiation rites. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AIS, GSW

ANT 223 - Multiculturalism: Race, Religion, and the Nation-State

Course Units: 1.0 Cultural diversity in terms of race, ethnicity, and religion is the focus of a great deal of controversy in many nations. This class examines the politics surrounding cultural difference in nation-states and the paradoxes of "multiculturalism," a popular strategy that on the one hand, validates cultural difference, and on the other hand, can be seen as reinforcing divisions and barriers. Does multiculturalism benefit racial, ethnic and religious minorities or does it construct barriers to equal opportunity? How can we get beyond multiculturalism to appreciate the benefits of cultural diversity? **CC:** LCC, SOCS, JCHF, JSPE

ANT 225 - Gender and Society

Course Units: 1.0 An examination of the role gender plays in human life. How does being labeled and socialized to be male or female shape peoples' daily life and life chances? How do our culture and others regard people who do not fit mainstream conceptions of maleness or femaleness? The course will discuss the concepts of gender and sex, gendered behavior and expectations, "third genders" (e.g., the North American berdache, the Indian hijra), homosexuality, transgendered individuals and sex-reassignment surgery, and cross-cultural similarities and differences. **CC:** LCC, SOCS, JCHF, JLIT, JSPE **ISP:** GSW

ANT 226T - Education and Culture

Course Units: 1.0 This course examines the relationship between educational systems, on the one hand, and their cultural and social environment, on the other hand. The course will consider such as issues as: 1) the relationship between schools and ethnic and national identity; how do educational systems attempt to construct national identities? Do they succeed? How are ethnic divisions reinforced or mediated by educational systems? 2) the relationship between imported international educational models and local cultures: how do the assumptions embedded in imported educational models conflict with local understandings about authority, knowledge, and society? 3) the ways that cultural assumptions are implicit in classroom routines; how can we analyze classroom routines to reveal the "hidden curriculum" of assumptions about knowledge, authority, and the qualities needed to be a good and successful person.

Students will conduct participant observation in a local school, will read and discuss works on education and society and will analyze local schools in papers. **CC:** LCC, SOCS

ANT 227 - Policing the Americas: Law and Order in the Western Hemisphere

Course Units: 1.0 The Western Hemisphere is a violent place: drug wars in Mexico, street gangs in Central America, mass killings in the United States, and everywhere soaring rates of violent crime. What kinds of responses are emerging to problems of law, order, and public security in the Americas? How are these responses reshaping our societies? To what extent is the current situation the legacy of failed security policies? What is the role of the police and policing in all of this? This class adopts an anthropological perspective on the practice of policing. It looks at policing as the production of law and order-not just by local cops on the beat but also by actors involved in national and international security. The focus is on the Western Hemisphere and the influence of the United States on the ideals, institutions, and practices of policing. Key topics include: immigration, incarceration, deportation, frontiers, the movement of licit and illicit goods, democratic rights, and the regional impact of U.S. security initiatives including the Cold War, the War on Drugs, and the War on Terrorism. These topics will be grounded in studies of policing and police reform in the United States, Brazil, Colombia, Guatemala, and Mexico. By the end of the semester, students will have a working knowledge of critical issues in contemporary policing as well as the legal, socio-cultural, and economic factors behind the emerging models of police in the Americas. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AMS, LAS, LAW

ANT 230 - Medical Anthropology

Course Units: 1.0 An examination of beliefs about illness, healing, and the body and how these are shaped by culture and society. Topics include healing practices across cultures, political forces shaping medical practice in the U.S., and birthing practices in different cultures. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** GSW,STS

ANT 231T - Health and Healing in Oceania

Course Units: 1 Offered on the Fiji term abroad, this course examines ideas about health and healing in Pacific Island nations, with a focus on Type 2 diabetes, which occurs at alarmingly high rates in many Pacific Island countries. We will examine local cultural and social factors that make itdifficult for individuals to take control of their health. We will consider both global factors that affect food supply . Students will attend weekly workshops with local nutrition workers to discuss campaigns to combat diabetes and to formulate strategies for spreading awareness of healthy ways of eating and living. This course is for students that have been admitted to the Fiji term abroad. **CC:** SOCS,

ANT 233 - Anthropology of Humanitarian Aid

Course Units: 1.0 What does it mean to help others? When is it an imperative and when is it an option? What considerations arise when the subject of assistance is in another country, a member of a different religion, or another culture? This course draws upon global case studies of humanitarian intervention in order to encourage students to engage critically with the complexity of what seems like an unequivocal good: humanitarian aid. Humanitarian aid plays a significant role in today's society, from the United States' recent and very complex engagement with the Ebola outbreak to aid that is dispensed as part of disaster relief. This course explores the ethics and politics of humanitarianism in global perspective. It addresses the cultural specificity of global humanitarian aid and the ways that humanitarianism has been theorized historically. This course examines the growing debate over the philosophical, moral, political, cultural and operational practices of such interventions. **CC:** LCC, SOCS

ANT 234 - Health and Healing in Africa

Course Units: 1.0 This course will explore the diversity of health-related beliefs and practices across Africa. We will firmly situate perspectives and approaches to health and illness within a broad sociocultural and historical context, also helping to challenge stereotypes associated with the continent. By cultivating a deeper knowledge of how African

communities perceive and treat afflictions as well as international responses to health crises (e.g. Ebola), we will develop a cross-cultural perspective that expands our understanding of global, as well as local, health and healing. **CC:** LCC, SOCS **ISP:** STS

ANT 237 - Gangs and Youth Violence

Course Units: 1.0 Bloods. Crips. Mara Salvatrucha (MS-13). The 18th St. Gang (M-18). Latin Kings. The names have become synonymous with senseless violence. Both feared and fetishized, the street gang became a focal point of urban politics in the United States and Latin America during the late twentieth century. Beginning with the neoliberal reforms of the 1980s, young, poor, minorities have found themselves at the center of a socio-economic crisis that has been accompanied by the rise of zero-tolerance policing. For the purposes of this class, the youth gang phenomenon will serve as a window in to the experience of racial, ethnic and economic marginalization under late capitalism. We will explore the context that gives rise to gang violence through a combination of anthropological, sociological, and historical approaches. By the end of the quarter, students will be familiar with the macro-social factors that shape both gangs and the politics of urban violence in the Americans. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AFR, AMS, LAS

ANT 238 - Anthropology of War

Course Units: 1 Why do humans fight wars? This course provides a cross-cultural, ethnographic perspective on this vital question that, in the nuclear age, may determine our collective destiny. Our case studies will be drawn from classic anthropological studies of warfare amongst hunter-gatherers - including the Mohawk who fought for the land upon which Union College is located - as well as recent and current conflicts. Is war caused by human nature and, if so, how? Are warlike societies more patriarchal and unequal? How does making war and defending against invasion change culture and society? When, if ever, is war justifiable? Is a human future without war possible? **CC:** LCC, SOCS, GCHF, GSPE

ANT 239 - Family and Kinship

Course Units: 1.0 How do families differ across cultures? How do families change with globalization, urbanization, migration and mass education? This course examines families and extended family networks in Asia, the Pacific Islands, Africa and the US. We will start by examining marriage, looking first at marriage in linage-based societies where family ties structure economic and political relationships and where marriages are used to establish alliances between groups. Next, we will focus on the reasons why arranged marriages are giving way to love marriages in many areas of the world and why people in many countries are postponing or opting out of marriage. A subsequent unit will look at international "care chains" in which people in wealthy first world nations pay people from poorer nations to care for children, people with long term illnesses, and the elderly. We will examine the impact of such care chains both in wealthy nations and on the families of those who migrate to take on jobs as care workers. Finally, we will examine changing ideas about the
elderly across cultures and a growing trend away from family care toward independent living and institutional care. **CC:** LCC,SOCS, GCHF, GSPE **ISP:** AIS, GSW

ANT 240 - Technology, Culture & Society

Course Units: 1.0 Examines the role of technology in cultural change and the role of culture in technological change. Particular attention will be given to: the Internet and other so-called "virtual community" formations, graphic design and other media, "reality" TV, cross-cultural advertising, and popular music. **CC:** LCC, SOCS **ISP:** FLM, GSWS, STS

ANT 241 - Environmental Anthropology

Course Units: 1.0 This course examines anthropological approaches to the environment and environmentalism. It asks questions such as: How does culture shape our perception of nature? What can conflicts over environmental protection,

natural resources and human manipulations of natural materials tell us about contemporary societies? What does it mean to call an issue "political" or "cultural," versus "scientific" or "technical"? Students will develop the critical analysis skills to examine the natural world as a site of cultural politics, using anthropological concepts to examine environmentalism in diverse geographical and historical settings, including the Amazon, the Niger Delta, the suburban mall, and the Union campus. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** ENS, STS

ANT 242 - Economic Anthropology

Course Units: 1.0 This course explores the social and cultural dimensions of production, exchange and consumption. Do all people everywhere seek to accumulate property, and to maximize profits? Is "rationality" the same in every culture? Do all think the same way about debt, bribery, gambling or marriage payments? Do human economies evolve inexorably-for example, from public to private property, from cowrie shells to electronic money, or from gifts and barter to sale and credit? Or is the picture more complex and the direction inconstant? Is there really any such thing as a "free" gift? What does The Godfather have to do with the exchange of necklaces and armbands in the South Pacific? Who wins and losses from "globalization"? Why do people value things? **CC:** LCC, SOCS, GCHF, GSPE

ANT 243 - Anthropology and International Development

Course Units: 1.0 Faith in twentieth-century development and progress has been severely shaken by the environmental crisis and the failures of the international development assistance. What is development? What is the third world? How was it made? What problems does it face and how is it changing? What are the causes of failure in development / aid programs? Drawing on a variety of ethnographic materials and case studies, this course discusses the nature of economic and social changes in post colonial societies and underdeveloped areas in the West / North, offers a critical analysis of sustainable development, and introduces the students to the practices, anthropological and otherwise, of planning policy interventions. The course shows how anthropological knowledge and understanding can illuminate "development issues" such as rural poverty, environmental degradation and the globalization of trade. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AIS, REE

ANT 244 - Urban Anthropology

Course Units: 1.0 Throughout history cities have been celebrated as spaces of inclusion and diversity, so that it is all too easy to overlook the pervasive reality of exclusion, poverty, and injustice. This class looks at the promise and perils of urbanization in the 20th and the 21st centuries. The approach is anthropological, however the course also draws on materials from geography, urban planning, and political economy to understand the history, development, and everyday experience of urban space **CC:** LCC, SOCS, GCHF, GSPE **ISP:** LAS

ANT 245 - Sport, Society, and Culture

Course Units: 1.0 The comparative study of the role of sport in society. Topics include the meaning of play and sport; the evolution of sport; sport and socialization; ritual in sport; sport and gender; sport and race; sport and education; sport, conflict and violence; and sport and cultural change. **CC:** LCC, SOCS **ISP:** AMS

ANT 246 - Anthropology of Human Rights

Course Units: 1.0 In recent years, anthropological discussions of human rights have gone beyond the traditional debate between universalism and relativism sparked by the 1948 Universal Declaration of Human Rights. Marginalized peoples who are the traditional subjects of anthropological research are increasingly using human rights rhetoric to advance their own causes or draw attention to their plight. This course will examine philosophical and anthropological discussions of human rights and contemporary debates and controversies surrounding human rights. In particular, we will examine the deployment of truth commissions in the aftermath of political violence, the role of human rights

NGOs, contested claims of suffering, and human rights interventions. **CC:** SOCS, LCC, GCHF, GSPE **ISP:** LAW, REE

ANT 247 - Living with Globalization

Course Units: 1.0 In recent decades, technologically-enabled increases in flows of capital, people, things, images and ideas around the world have resulted in the process of global integration and compression commonly called "globalization." In this course we will explore globalization from the perspective of anthropology, tracing its consequences both for the world's economic and political systems, and for the everyday lives of people around the globe. Topics will include: cultural dimensions of changing labor practices and systems of production, the role of globalization in cultural homogenization and differentiation, the ways the migrants, refugees, tourists and others forge new supra-national forms of sociality and identity, and the role of media flows and commodity consumption in the production of global identities. **CC:** LCC, SOCS

ANT 250 - Humans and Animals

Course Units: 1.0 This course examines representations and practices of human-animal relations across cultures. It will begin with examining beliefs about the nature of animals across cultures, including the ways they are similar to and different from humans. We will then look at the many varying relationships between humans and animals in different cultures and will show how these are shaped by social systems **CC:** LCC, SOCS **Note:** Electives (only one cross-listed course can count for the major or minor)

ANT 252 - Anthropology of Christianity

Course Units: 1.0 Although Christianity has its historical roots in the Mediterranean world, during its 2000 year history it has migrated to almost every geographical area of the globe giving rise to many vibrant local Christianities with distinct and culturally specific identities. While many people associate contemporary Christianity with Euro-Americans, scholars point to Christian churches dating from the 5th century in North Africa and in India. Scholars argue that the demographic center of Christianity has already shifted to the Global south. This course investigates the ways Christianity has been shaped by contact with different world cultures and the social processes and religious changes implicit in the acculturation of Christianity in diverse geographical regions and cultural contexts. Questions addresses will include: i) how has Christianity been localized in various areas of the world?; ii) what is the appeal to Pentecostalism in the global south? Is it a conservative force directing attention away from social inequalities or does it challenge social inequalities? iii) what kinds of transnational networks are formed by contemporary Christians and how do these shape new kinds of identities?; iv) what is the appeal of apparently patriarchal and conservative forms of Christianity to women, who form the majority of Christians in most areas? **CC:** LCC, SOCS **ISP:** REL

ANT 254 - Anthropology of Religion

Course Units: 1.0 Comparative study of religious behavior and ideology. Examines the ways that a wide array of religions help individuals to cope with life problems and reinforce social groups. Examines debates about the extent to which religion shapes human motivation and about the relationship between religion and society. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** REL

ANT 255T - Culture and Work

Course Units: 1.0 This course, offered on the India term abroad, takes a broad perspective on the relationship between culture and work. Course readings, assignments and discussions, will prompt students to consider how work activities are shaped by culture and the larger social context by examining: I) institutional cultures involving idiosyncratic authority structures, routines, shared knowledge and so on; ii) how local cultures are influenced by their place in larger international production chains. **CC:** LCC

ANT 256 - Anthropology of Islam

Course Units: 1.0 This class provides an anthropological perspective on Islam, one that tries to understand Islam as a living tradition. There are well over a billion Muslims in the world who speak countless languages and reside in dozens of nation-states. The immense diversity of Islamic practice and Muslim life is bewildering and defies any simple generalization. However, this diversity need not blind us to the themes that connect Islam and cut across Muslim life around the world. While not an exhaustive survey of Islamic practice and ways of life, this class focuses on the themes that connect Islam across diverse regions and peoples. These themes include: Islamic authority, conceptions of gender, the importance of Islamic law, and the value of Islamic community. In this class, we look beyond local variation to understand Islam as a living tradition. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AIS, REL

ANT 258 - Anthropology of Media

Course Units: 1.0 How do communications media reshape ourselves and the worlds we inhabit? This course examines the influence of media on contemporary society. It focuses on identity formation and the different ways that scholars have approached the relationship between media and our taken-for-granted norms, practices, and beliefs. Readings draw from a wide range of disciplines and intellectual traditions, including cultural studies, critical media theory, critical race studies, feminist studies and communication. However, the fundamental approach is anthropological. Our aim is to understand how everyday media practices relate to larger issues of personal, social and cultural identity. To this end, the class moves back and forth between theory and ethnography so that students develop both a sense of key questions in the field and an idea about how to answer them. **CC:** SOCS, WAC, GCHF, GSPE **ISP:** STS

ANT 260 - Tourists and Tourism

Course Units: 1.0 This course examines the practice of tourism as a way of knowing the world and constituting the self. It also explores the role of tourism in the lives of those who act as hosts to tourists. Topics include the role of tourism in the essentialization and commodification of culture, the emergence, organization, and effects of mass tourism, the cultural dynamics surrounding several kinds of niche tourism, and the possibility of socially and ecologically responsible tourism development. **CC:** LCC, SOCS

ANT 265 - The Museum: Theory & Practice

Course Units: 1.0 This course is designed to introduce students to the work of museums through an internship at a Schenectady Museum and accompanying seminar. Articles from anthropology and history (including art history) expose you to the range of practical (e.g., exhibit design, collections policy, planning educational programs) and theoretical issues scholars study (e.g., intellectual property, commodifying culture, whose voice and history should be heard). The internship at a Schenectady Museum gives hands-on experience with museum work and the day-to-day issues museum staff confront. Several field trips introduce different types of museums. **Cross-Listed:** HST 265 **CC:** LCC, SOCS

ANT 270 - Political Anthropology

Course Units: 1.0 The course introduces anthropological approaches to the study of politics. We will examine influential theories of power, democracy and the state and apply them to understanding particular cases in various areas of the world. Topics covered will include: ethnographies of local politics, democratic elections, ethnographies of bureaucracy and other state institutions, ethnographic accounts of the political implications of development practice, and ethnographies in and of the "world system." We end by exploring the implications of globalization for studying politics and the state. **CC:** LCC, SOCS, GCHF, GSPE

ANT 272 - Psychological Anthropology

Course Units: 1.0 This course examines the influence of culture and society on individual psychology. Readings and class discussions examine the history of the way anthropologists have thought about the relationship between culture and personality. Issues examined will include: Do cultures produce and favor distinctive personality types? How is mental illness shaped by cultural beliefs and social practices? Are there distinctive "culture bound syndromes" and, if so, what produces them? Do cultures provide tools to help individuals adjust to crises? Do some cultures do this better than others? Are emotions fundamentally the same across cultures or does emotional experience vary significantly with culture? Is there a culture of psychiatry in the US? How do our cultural assumptions and our pharmaceutical industries shape our views of personality and mental illness? Cases will be drawn from Oceania, Asia, North America, and the Middle East. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AIS, GSW, STS

ANT 274 - Mapping Musical Lives: Ethnography of Performing Arts

Course Units: 1.0 This seminar explores the relationship between music and culture through live performance, discussion, video and audio, and workshops in a variety of world music areas. Students will also consider how one conducts research on performing arts, culminating in a focused project on music-making in the community. Students thus will encounter diverse peoples and their musical practices in cross-cultural comparison while also exploring research methodology through their own work. **Cross-Listed:** AMU 220 **Prerequisite(s):** AMU 101 , AMU 120 / ANT 148 , or permission of the instructor. **CC:** LCC, HUM, SOCS, JCHF, JSPE, WAC-R **ISP:** REE

ANT 280 - Contemporary India

Course Units: 1.0 The second-fastest growing major economy in the world, India is also a country with hundreds of millions of people living in extreme poverty. Arguably the most successful democracy in the postcolonial world, Indian politics is also pervaded by corruption and violence. The course will examine recent political developments in India such as the rise of Hindu nationalism, the spread of lower-caste politics, and economic liberalization. We focus on the challenges that India faces in the twenty-first century, including land and water scarcities, the already visible effects of global warming, and growing inequalities between regions and social groups. This will add complexity and balance to the now widespread image of India as a rising economic superpower within an emergent "Asian Century." **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AIS

ANT 283 - Peoples and Cultures of Latin America

Course Units: 1.0 Examines the peoples and cultures of Latin America in historical and contemporary perspectives. Uses case studies, accompanying articles, and a range of media. Themes include: colonialism, identity politics, expressive culture, religion, gender, race, ethnicity, nationalism, and political economy. **CC:** LCC, SOCS **ISP:** LAS

ANT 295H - Anthropology Honors Independent Project 1

Course Units: 0.0 (Tutorial for Union Scholars Sophomores; permission of instructor required)

ANT 296H - Anthropology Honors Independent Project 2

Course Units: 1.0 (Tutorial for Union Scholars Sophomores; permission of instructor required) **Prerequisite(s):** ANT 295H

ANT 363 - Research Methods & Design

Course Units: 1 An introduction to qualitative research methods in anthropology. The course examines the ways anthropologists collect data through participant observation, non-directive interviewing, questionnaires, examining case studies, and doing symbolic and behavioral analyses. We examine the strengths and weaknesses of these methods and compare them to methods of other social sciences to illuminate the anthropological approach to understanding society

and culture. Students learn how to formulate research questions and a research project, apply the best methods to a particular research design, and write a proposal. **Prerequisite(s):** ANT 110 **CC:** LCC, SOCS, WAC, WAC-R

ANT 390 - Thinking about Culture

Course Units: 1.0 A broad overview of the history of American and European anthropological approaches to studying individuals and societies. Students examine the strengths and weaknesses of contemporary and historical paradigms through critical reading and analysis papers. **Prerequisite(s):** ANT 110 **CC:** LCC, SOCS

ANT 490 - Anthropology Independent Study 1

Course Units: 1.0 Tutorial for individual students. **Prerequisite(s):** A minimum GPA of 3.2.

ANT 490T - Anthropology Independent Study Abroad

Course Units: 1.0 Tutorial for individual students. **ISP:** ENS

ANT 491 - Anthropology Independent Study 2

Course Units: 1.0

ANT 492 - Anthropology Independent Study 3

Course Units: 1.0

ANT 498 - Anthropology Senior Thesis 1

Course Units: 0.0

ANT 499 - Anthropology Senior Thesis 2

Course Units: 2.0 **CC:** WS

Arabic

ARB 100 - Basic Arabic 1

Course Units: 1.0 This course introduces students to the Arabic language and helps them with basic reading, speaking, listening, and writing skills, with particular attention given to basic Arabic conversation, cultural diversity, and writing system. **CC:** HUM, JWOL

ARB 101 - Basic Arabic 2

Course Units: 1.0 A continuation of ARB 100 . **Prerequisite(s):** ARB 100 or permission of the instructor. **CC:** LCCA, HUM

ARB 102 - Basic Arabic 3

Course Units: 1.0 A continuation of ARB 101 . **Prerequisite(s):** ARB 101 or permission of the instructor. **CC:** LCCA, HUM, LCC

ARB 200 - Intermediate Arabic 1

Course Units: 1.0 Review and continued development of all skills in Arabic. **Prerequisite(s):** ARB 102 or permission of the instructor. **CC:** HUM, LCCA

Astronomy

AST 050 - The Solar System

Course Units: 1.0 An introductory but detailed discussion of the solar system with special emphasis on the application of physics and the measurement of fundamental properties. Topics include the contents of the solar system (earth, moon, sun, planets, asteroids, comets), formation of the solar system, evolutionary processes (cratering, volcanism, tidal effects), extrasolar planetary systems, and possibilities of life on other planets. Labs will be performed in which students learn how to find and observe the planets and measure fundamental properties. No background in mathematics or physics required. **Corequisite(s):** AST 050L **CC:** SCLB, SET, GNPS **ISP:** STS

AST 051 - Introduction to Astronomy

Course Units: 1.0 A descriptive review of current knowledge in astronomy, including methods of measurement and the applications of physics to astronomy. Topics include stars (structure, formation, and evolution), galaxies, and the universe. Evening laboratory sessions in which students learn how to use cameras and telescopes. No background in mathematics or physics required. **Corequisite(s):** AST 051L **CC:** SCLB, GNPS

AST 052 - Relativity, Black Holes, and Quasars

Course Units: 1.0 A descriptive introduction to Einstein's theories of Special and General Relativity, with applications to the astrophysical phenomena of black holes and quasars. No background in mathematics or physics required. **CC:** SET

AST 058 - Astrobiology: Life in the Universe

Course Units: 1.0 Does life exist elsewhere in the universe, or are we alone? The emerging science of astrobiology attempts to answer this fundamental question using an interdisciplinary approach rooted in biology and astronomy. This course will examine the current state of our scientific knowledge concerning the possibility of life elsewhere in the universe. Topics include: the nature and origin of life on Earth, the possibility of life on Mars and elsewhere in the Solar System, the search for extrasolar planets, the habitability of planets, and the search for extraterrestrial intelligence. **CC:** SET **ISP:** STS

AST 100 - Introduction to Astrophysics

Course Units: 1.0 An introduction to the field of astrophysics, with an emphasis on a scientific understanding of stars and the universe. Topics include stars (structure, formation, and evolution), galaxies (the Milky Way, galaxy types, quasars, and active galaxies), dark matter, and the Big Bang model of the universe. One hour mathematics/computational lab each week. **Prerequisite(s):** PHY 110 or PHY 120 or IMP 120

AST 200 - Stellar Structure and Evolution

Course Units: 1.0 An examination of the physical principles governing the structure and evolution of stars. Topics include radiation laws, and the determination of stellar temperature, luminosity, and composition; radiative transfer and the interior structure of stars; nuclear fusion and nucleosynthesis; star clusters and stellar evolution; and stellar remnants (white dwarfs, neutron stars, pulsars, and black holes). **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121

AST 210 - Galaxies

Course Units: 1.0 A survey of the physical properties, dynamics, and distribution of galaxies. Topics include the content, formation, and evolution of the Milky Way and other galaxies; the large-scale distribution of galaxies; interactions between galaxies; dark matter; active galactic nuclei; and quasars. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 113 or IMP 121 .

AST 220 - Cosmology and General Relativity

Course Units: 1.0 A detailed study of the universe. Topics include an introduction to general relativity; the shape, size, age, and future of the universe; models of the primordial universe, including the Big Bang Theory and the Inflation Theory; the origin of the elements; dark matter; the cosmic background radiation; and the formation of galaxies. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 , and MTH 115 . PHY 122 is recommended.

AST 230 - Observational Astronomy

Course Units: 1.0 A laboratory-based course dealing with modern astronomical techniques. The course work will involve primarily nighttime observations with a 20-inch telescope and computer analysis of the data. Techniques covered include CCD observations, sky subtraction, spectroscopy, and photometry. Student projects may include determination of the distances and ages of star clusters; measurements of the variability of stars and of quasars; measurements of the masses of Jupiter, binary star systems, and galaxies; and determination of orbits of asteroids. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 113 or IMP 121 or permission of the instructor (with some telescope experience). **CC:** WAC, WAC-R

AST 240 - Radio Astronomy

Course Units: 1.0 A laboratory-based course in the observing methods and the astrophysics learned from astronomical studies at radio wavelengths. Topics include the operation of a radio telescope; important emission mechanisms; star formation regions; interstellar gas; interstellar molecular clouds; radio galaxies; and the cosmic microwave background. Student projects will involve observations with Union's 2-meter radio telescope and with the 37-meter radio telescope at the Haystack Observatory in Westford, Massachusetts. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 ; Recommended: MTH 115

AST 250 - Planetary Science

Course Units: 1 An introduction to the field of planetary science, with an emphasis on a scientific understanding of the Solar System. Topics include: formation and evolution of the Solar System; Kepler's Laws and orbits; physical processes in the Solar System; planetary geology and atmospheres; properties of planets, satellites,; asteroids and comets; extra solar planets; habitability. **Prerequisite(s):** PHY 120 , IMP 120 or 200-level GEO course.

AST 290 - Astronomy Practicum 1

Course Units: 0.0 Available to students on an individual basis, students undertake activities that provide on-the- job experience relevant to possible careers for astronomy majors. The particular set of experiences for each term is chosen by the student in consultation with the academic advisor and Department. The activities available include, but are not limited to: internship with the planetarium at the Schenectady Museum or with the Dudley Observatory; running monthly open houses at the Union College Observatory; writing regular science columns for the college newspaper; giving presentations at the bi-weekly Astronomy News Discussion group in the Physics and Astronomy Department; and undertaking a research-oriented independent study in astronomy under the supervision of a professor. Each term is graded on a pass-fail basis with one course credit granted after completion of three terms. To receive a passing grade, the student is expected to work the equivalent of four hours per week and submit a summary report at the end of each term.

AST 291 - Astronomy Practicum 2

Course Units: 0.0 Available to students on an individual basis, students undertake activities that provide on-the- job experience relevant to possible careers for astronomy majors. The particular set of experiences for each term is chosen by the student in consultation with the academic advisor and Department. The activities available include, but are not limited to: internship with the planetarium at the Schenectady Museum or with the Dudley Observatory; running monthly open houses at the Union College Observatory; writing regular science columns for the college newspaper; giving presentations at the bi-weekly Astronomy News Discussion group in the Physics and Astronomy Department; and undertaking a research-oriented independent study in astronomy under the supervision of a professor. Each term is graded on a pass-fail basis with one course credit granted after completion of three terms. To receive a passing grade, the student is expected to work the equivalent of four hours per week and submit a summary report at the end of each term.

AST 292 - Astronomy Practicum 3

Course Units: 0.0 Available to students on an individual basis, students undertake activities that provide on-the- job experience relevant to possible careers for astronomy majors. The particular set of experiences for each term is chosen by the student in consultation with the academic advisor and Department. The activities available include, but are not limited to: internship with the planetarium at the Schenectady Museum or with the Dudley Observatory; running monthly open houses at the Union College Observatory; writing regular science columns for the college newspaper; giving presentations at the bi-weekly Astronomy News Discussion group in the Physics and Astronomy Department; and undertaking a research-oriented independent study in astronomy under the supervision of a professor. Each term is graded on a pass-fail basis with one course credit granted after completion of three terms. To receive a passing grade, the student is expected to work the equivalent of four hours per week and submit a summary report at the end of each term.

Theater

ATH 050 - Theater Performance Practicum

Course Units: 0.0 Students are invited to participate in theater or dance productions in a variety of capacities, both on-stage and off-stage. ATH 050 is a practicum credit for performance in a faculty led production. Students must audition and be cast in a role in order to receive this credit. Can be used toward practicum requirement for Theater Majors and Minors.

To gain transcript recognition for participation in these activities, students must fill out the request for practicum credit form with the department, and achieve a passing grade from the faculty supervisor. Requests for practicum transcript recognition must be filed with the registrar during the term in which the practicum is undertaken. During the senior

year, students may request up to two full practicum credits towards graduation. Such requests are made to the registrar during the senior year transcript audit (or its equivalent for those who plan to graduate early). Each full theater practicum credit is accumulated from three previous passing grades (any combination of theater and dance practicum). No more than two such graduation credits are available, whatever the discipline (theater or dance).

ATH 052 - Stage Management Practicum

Course Units: 0 Students are invited to participate in theater or dance productions in a variety of capacities, both on-stage and off-stage. ATH 052 is a practicum credit in the area of stage management (usually assistant stage manager). Can be used toward stage management experience and practicum requirement for Theater Majors and Minors. Successful completion or simultaneous registration in ATH 124 is recommended. Requires Faculty permission.

To gain transcript recognition for participation in these activities, students must fill out the request for practicum credit form with the department, and achieve a passing grade from the faculty supervisor. Requests for practicum transcript recognition must be filed with the registrar during the term in which the practicum is undertaken. During the senior year, students may request up to two full practicum credits towards graduation. Such requests are made to the registrar during the senior year transcript audit (or its equivalent for those who plan to graduate early). Each full theater practicum credit is accumulated from three previous passing grades (any combination of theater and dance practicum). No more than two such graduation credits are available, whatever the discipline (theater or dance).

ATH 053 - Production Practicum

Course Units: 0

Students are invited to participate in theater or dance productions in a variety of capacities, both on-stage and off-stage. ATH 053 is a practicum credit for production work (technical work or production crew assignments) on a faculty led production. Can be used toward practicum requirement for Theater Majors and Minors. Requires Faculty Permission.

To gain transcript recognition for participation in these activities, students must fill out the request for practicum credit form with the department, and achieve a passing grade from the faculty supervisor. Requests for practicum transcript recognition must be filed with the registrar during the term in which the practicum is undertaken. During the senior year, students may request up to two full practicum credits towards graduation. Such requests are made to the registrar during the senior year transcript audit (or its equivalent for those who plan to graduate early). Each full theater practicum credit is accumulated from three previous passing grades (any combination of theater and dance practicum). No more than two such graduation credits are available, whatever the discipline (theater or dance).

ATH 054 - Design Practicum

Course Units: 0 Students are invited to participate in theater or dance productions in a variety of capacities, both on-stage and off-stage. ATH 053 is a practicum credit for design or assistant design (Scenic, Lighting, Costume, Hair/Makeup, Props, Video/Projections, or Sound) on a faculty led production. Can be used toward practicum requirement for Theater Majors and Minors. Requires Faculty Permission.

To gain transcript recognition for participation in these activities, students must fill out the request for practicum credit form with the department, and achieve a passing grade from the faculty supervisor. Requests for practicum transcript recognition must be filed with the registrar during the term in which the practicum is undertaken. During the senior year, students may request up to two full practicum credits towards graduation. Such requests are made to the registrar during the senior year transcript audit (or its equivalent for those who plan to graduate early). Each full theater practicum credit is accumulated from three previous passing grades (any combination of theater and dance practicum). No more than two such graduation credits are available, whatever the discipline (theater or dance).

ATH 100 - Public Speaking

Course Units: 1.0 A practical introduction to speechmaking. Through varied and increasingly complex speech assignments, students learn to integrate standard skills in public communication: speech concept and content, the organization and support of ideas, audience analysis and involvement, plus physical presentation techniques including personal style and the mastery of multimedia presentational technology. **CC:** HUM, GCAD, GSPE

ATH 102 - Introduction to Theater

Course Units: 1.0 The concepts and practices of theater as an artistic collaboration, a profession and a communal event is the focus of this introductory course. This is an explorative overview of theater, including a study of the professions relating to the creative process: playwriting, acting, directing and design. A variety of forms and styles of theater will be reviewed and discussed through the reading and analysis of three significant plays in the dramatic lexicon. We will study the process of theater production and the demands of theater as a business. You will gain an ability to critically view theater productions. **CC:** HUM, WAC, JCAD, JCHF

ATH 104 - Dramatic Literature and Social Justice

Course Units: 1.0 Plays acted onstage provide both entertainment and a forum for audiences and actors to question their relationship with the people and culture that surround them, as we are encouraged to understand and empathize with texts and characters brought to life through performance. In this course we will survey selected plays central to and representative of the development of major trends in dramatic literature. The principles of dramatic analysis--genre, character, plot, language, style, etc.--will be explored, as well as some of the economic, geographical, political, and intellectual factors that shaped the societies in which these plays were written and thus provide a context for the various plays and playwrights. Course readings will include plays such as Antigone, Pseudolus, Everyman, Doctor Faustus, A Midsummer Night's Dream, The Importance of Being Earnest, Ubu the King, Trifles, Waiting for Godot, and more. **Cross-Listed:** EGL 102 **CC:** HUL, HUM, JLIT, WAC **ISP:** GSWS

ATH 105 - Special Topics in Theater

Course Units: 1.0

Topics chosen from a variety of performance theory design and technical areas according to faculty and student interests. Topics may include, but are not limited to, special studies in theater, performance art, movement theater, lighting/sound design and costume construction/design.
What is theater as social action? In this studio performance course, we will explore the application of theater practices within the fields of education, community development, and the pursuit of social justice. Throughout the course you will be exploring case studies of artists and defining movements in interdisciplinary theater practices as well as designing and workshopping your own performance projects. This course invites you to bring in what's important to you, and to make something that facilitates change.

CC: HUM **Note:** Some topics may be cross-listed with other Departments and Programs.

ATH 108 - Stage Make-up

Course Units: 1.0 Study of basic techniques and materials used to create theatrical stage makeup. We will cover general facial modification, historic and vintage styles, character specific needs, creature/fantasy inspired, and trauma makeup. We will also explore the use of wigs and facial hair, as well as an introduction to prosthetic appliances. **CC:** HUM

ATH 110 - Stage Craft 1

Course Units: 1.0 This course seeks to introduce students to the language and practice of technical theater. It covers the basics of tools, hardware, theatrical construction, safety practices, lighting, painting and the physical space. Additional weekly lab hours are required for the hands-on experience of building the department production and are scheduled once the term begins at the mutual convenience of student and instructor. **CC:** HUM **Note:** Required for Theater Majors and Minors.

ATH 111 - Introduction to Design

Course Units: 1 This course will acquaint the student with the art and practice of design for live performances. It will explore the Designers' roles, and the process necessary to realize their visions on the stage. We will learn the basic building blocks of artistic design, and how those can be applied primarily to sets, lighting, and costumes, with some discussion of sound and projections as well. **CC:** JCAD **Note:** Recommended for Majors and Minors

ATH 112 - Acting 1

Course Units: 1.0 Designed to engage the aspiring actor in developing performance power, technique, and discipline, including self-discovery, in-depth character exploration, and textual analysis. Understanding what goes into actions, objectives, and given circumstances will be part of the process of beginning monologue and scene work. Appreciation of theater as a profession through learning how to prepare and see other performances. It will require an open heart and mind in order to have the opportunity to take risks, challenge oneself, and be creative. **CC:** HUM **Note:** Required for Theater Majors and Minors.

ATH 113 - Introduction to Stage Design

Course Units: 1.0 This studio course is an introduction to the principles and practices of theatrical scenic design. Students will explore theatrical design techniques and how these contribute to the collaborative storytelling process and the relationship of theatrical design to film, architecture and animation. The course will include introduction to design fundamentals, script analysis, visual research, architecture, hand drafting, fast rendering techniques, perspective rendering and model building **CC:** HUM **Note:** Satisfies design requirement for Theater Majors and Minors.

ATH 117 - Fundamentals of Stage Lighting Design

Course Units: 1.0 This course seeks to introduce students to the world of stage lighting design and technology. Initial emphasis will be on electrical theory, photometrics and the wide variety of fixtures and control boards in use in the modern theater. The class will then progress to basic lighting theory and analysis of lighting techniques. In the final weeks, the class will actively participate in the design, hang, focus and programming of the lighting for a departmental production. **CC:** HUM **ISP:** FLM **Note:** Satisfies design requirements for Theater Majors and Minors.

ATH 118 - Introduction to Costume Construction

Course Units: 1.0 This course studies the basics of garment construction and costume shop procedures primarily as they relate to the theatrical world. The focus is on practical application of construction techniques, and will include introduction to and use of hand and machine sewing as well as use of self-made and commercial patterns to create wearable garments. **CC:** HUM

ATH 119 - CAD/Vectorworks

Course Units: 1.0 Drafting for the Theater, is an introduction to the terminology, tools, techniques and software used in technical and design planning for stage scenery and lighting. It is primarily a lecture-style course but also includes collaborative time to work on projects in a group and share tips and tricks for more efficient drafting. Upon successful completion of this class, students will have a solid foundation in VectorWorks, know how to convey information

graphically, know how to read shop drawings, and how to find graphical solutions to geometric and trigonometric problems. **CC:** HUM

ATH 122 - Introduction to Costume Design

Course Units: 1.0 An exploration into the principles and practice of stage costume design including an historical survey of clothes and fashion. The course will be geared toward practical application of design theory and collaboration in conjunction with directors and other designers. **CC:** HUM, JCAD, JLIT **Note:** Satisfies design requirement for Theater Majors and Minors.

ATH 123 - History of Fashion and Dress

Course Units: 1.0 We will be analyzing cultural influences of the exterior world, the psychology of dress, period movement, and the expression of self through choice of dress. Student research projects will be presented to the class throughout the term in combination with discussions and lectures on fashion periods. The class will culminate in a final research paper and class presentation on a specific subject of fashion history chosen by the student. **CC:** HUM, WAC, JCHF

ATH 124 - Stage Management: Live Performance

Course Units: 1 This course will introduce the student to the world of stage management for live performance. Working from the beginning of the process through to the opening night we will break down what makes a great team, along with providing step-by-step paperwork tutorials for important documents needed along the way. Students will choose a play from a provided list and will work on that text for the term. Work will also include exercises in leadership, communication, and teamwork along with interviews and connections with professionals from a variety of theatrical areas.

ATH 125 - Improvisation 1

Course Units: 1.0 This class allows the individual and the group to explore through intuitive creative ways a physical, emotional and spontaneous form of approaching theater. This course prepares the performer for advanced training techniques by focusing attention on freeing the body to communicate. Emphasis will be placed on spatial awareness and control, physical characterization and developing performing skills in gestural relationships, kinesthetic response, tempo and character dynamics. Theater games and a variety of improvisation methodologies will be used in the practice of performance discipline, risk taking and collaboration on stage. **CC:** HUM

ATH 128 - Stage Combat

Course Units: 1.0 An exploration of physical violence on the stage from the classical to the contemporary. The basic techniques of unarmed Stage Combat will be introduced as well the use of the Medieval Quarterstaff and Elizabethan Rapier. Students at the conclusion of the course will be expected to be able choreograph a safely executed fight for the stage from an existing play. **CC:** HUM

ATH 140 - American Musical Theater and Dance

Course Units: 1.0 This course is an introduction to the American Musical from Vaudeville and Minstrel Shows to today's contemporary Broadway shows. Through lectures, video viewing and workshops students will learn an historical background focusing on the work of lyricists, composers, choreographers, directors and producers. This unique American entertainment art form reflects American diversity and culture, changing times, values and trends. **Cross-Listed:** ADA 140 **CC:** LCC, HUM **ISP:** AMS

ATH 150 - Staging Exploration in Theater and Dance

Course Units: 1.0 This course provides an in-depth examination of a specific period or theme in multidisciplinary artistic production, immersing students in significant developments in performative expressions. The course explores dynamic movements such as avant-garde, dance theater, or social justice, alongside their historical contexts and key figures in theater, dance, and related performing arts. Through a combination of discussions, lectures, studio labs, and collaborative creation, students will engage deeply with these topics. The culmination of this exploration is a campus performance, showcasing students' understanding and creative interpretations. **Cross-Listed:** ADA 150 **CC:** HUM, GCAD

ATH 151 - Directing 1

Course Units: 1.0 Students explore the process of bringing the script and the director's concept to the stage by working with actors through casting, script analysis, rehearsal, and performance. Previous acting experience (in class or in production) required. **CC:** HUM

ATH 223 - Voice & Movement

Course Units: 1 Voice & Movement I introduces students to the fundamentals of vocal production and movement as components of an actor's instrument. Through a combination of exercises and in-class performances, students will learn how stress and habitual use impact the vocal mechanism and their movement patterns on stage. Students will work toward voices and bodies that are available, expressive, truthful, spontaneous and capable of variety. Practitioners and methods referenced in this course include Kristin Linklater, Rudolph Laban, Jacques Lecoq, Viewpoints, butoh, yoga and the Alexander Technique.

ATH 225 - Metal Working for the Stage

Course Units: 1 Metal working will be a laboratory exploration in the use of metal as a scenic material. The concentration of this course will include safe working practices, the use of metal working tools, and the various welding and metalworking processes.

ATH 226 - Stage Craft 2

Course Units: 1.0 Intermediate level course in the technical aspects of theatrical production. Building on the production information from ATH 110, this course takes a more in-depth exploration of the nuances of stagecraft. In addition, students will take on the role of a production supervisor and be responsible for managing a group of theater technicians during their lab hours and an approved final construction project, coordinated with the students' areas of production exploration. **Prerequisite(s):** ATH 110 and permission of the instructor. **CC:** HUM

ATH 230 - Movement for Actors

Course Units: 1.0 Development of the actor's body as an expressive instrument. Yoga/centering exercises, acrobatics and circus techniques are explored to achieve a flexible, free, strong and restfully alert body on stage. Contemporary and period character development through movement. **CC:** HUM

ATH 231 - Voice for the Stage

Course Units: 1.0 Sighs, sobs, moans, groans, and growls: This studio performance course explores the human connection between the needs of our physical-emotional body and our desire to make sound. This course will provide foundational techniques for speaking and singing on stage, including the integration of our emotionally rich inner life

with an unrestricted airflow. Class work will include daily physical and vocal explorations, as well as in-class presentation of dramatic literature, songs, improvisations, and found text. This class is appropriate for all levels of acting or singing experience, beginners and seasoned performers are equally welcome, although a desire to vocalize with others is necessary. **CC:** HUM

ATH 233 - Performance Devising

Course Units: 1

ATH 235 - Physical Theater

Course Units: 1.0 This course emphasizes the development of the actor's body as an expressive instrument. Primarily focus is on the actor's physical presence, actions over language, and use of gestures. Actors/dancers will be trained in techniques that focus on the building of strength, flexibility, improvisation targeting relationships and interplay between performers, and visual elements to create scenic imagery. Workshops pursue a wide range of styles, approaches and aesthetics including dance-theater, movement theater, mask, use of live camera to project performers' actions and interactions with props and scenery. We review a variety of styles of physical expression to broaden theatrical actions. **CC:** HUM

ATH 240 - From the Drama Desk: Performance, Culture and Creativity

Course Units: 1.0 This is an intensive and practical course on reading and writing dramatic criticism. A look at the concepts and practices of theater criticism in American theater begins with a discussion of major theories of Western drama, from Aristotle to Artaud. Through the reading and discussion of contemporary examples of dramatic criticism and directed studies in techniques of journalistic writing students will gain an understanding of the nature and function of a theater review and an ability to critically view theater productions. Writing will include research essays, response papers and critical reviews of play scripts as well as performances on campus and at professional theaters. **CC:** HUM, JCAD, JCHF, JLIT

ATH 241 - Contemporary American Theater and Drama

Course Units: 1.0 This course examines trends and notable works visible today in the American theater. We will read plays that have had major successes on Broadway and American regional theaters, as well as study avant-garde works and theatrical and performance artists engaging with new forms and techniques in order to transform theatrical performance in our culture today. Through class discussions and assignments including student presentations, seeing professional theatrical performances, research projects, and critical essays, students will develop their ability to engage critically with theatrical art and artists of our present moment. **Cross-Listed:** EGL 292 **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, declared theater major, or permission of the instructor. **CC:** HUM, WAC, JCAD, JCHF, JLIT **ISP:** AMS, GSWS

ATH 242 - Introduction to Dramaturgy

Course Units: 1 The course explores the practice of dramaturgy and the various functions currently performed by the artist/scholar identified as "dramaturg" including research, dramatic criticism/interpretation, new play development, marketing and educational outreach, and textual analysis/editing/adaptation. The class focuses primarily on production dramaturgy, but will briefly address new play dramaturgy/literary management. **CC:** HUM, WAC-R

ATH 243 - History of Theater

Course Units: 1.0 An investigation of the development of Western theater from its roots in Greek tragedy to the contemporary with special focus on the works of Sophocles, Plautus, Medieval Theater, the Commedia dell'arte,

Elizabethan theater, Moliere, Restoration, and 19th century American theater. This class concentrates on the nature of theater-in-performance including the physical development of theater spaces, staging concepts, and the artist-audience relationship") to the following: "This course is an investigation of the development of theatrical history, literature, and theory in the Western world from the ancient Greeks to the present day, focusing particularly on works and traditions that have influenced our own theatrical practice. We will examine the ways performance techniques have changed along with the economic, political, and intellectual factors that have also shaped other aspects of society. This class concentrates on the nature of theater-in-performance including the physical development of theater spaces, staging concepts, and the artist-audience relationship. **CC:** HUL, HUM, LCC, JCAD, JCHF, WAC, WAC-R

ATH 245 - Contemporary American Theater and Drama

Course Units: 1 This course examines trends and notable works visible today in the American theater. We will read plays that have had major successes on Broadway and American regional theaters, as well as study avant-garde works and theatrical and performance artists engaging with new forms and techniques in order to transform theatrical performance in our culture today. Through class discussions and assignments including student presentations, seeing professional theatrical performances, research projects, and critical essays, students will develop their ability to engage critically with theatrical art and artists of our present moment. **Cross-Listed:** EGL 292 **CC:** HUL, HUM, LCC, WAC, JCAD, JCHF, JLIT **ISP:** AMS, GSW

ATH 248 - Staging Black Feminisms

Course Units: 1 This course considers the feminist and anti-racist practices of Black female dramatists, placing their plays within their cultural contexts. We will examine the ways in which these works construct Black feminist histories, genealogies, and cultures while challenging racial and sexual hierarchies in both American society and artistic canons. Each week, students will read a landmark dramatic text by a Black female playwright as well as seminal sociological texts and scholarly studies that contextualize the work within broader artistic and social movements. Through discussions, field trips including attendance at theatrical performances and other cultural events, reading responses, and a final presentation based on individual research, students will hone their thinking about the development of Black female voices in American dramatic literature and society. **Cross-Listed:** EGL 268 ,SOC 209 **CC:** HUL, HUM, SOCS, WAC, JCAD, JCHF, JLIT, JSPE **ISP:** AFR, GSW

ATH 256 - Shakespeare to 1600

Course Units: 1 We'll explore in this course some of the most entertaining, moving, and provocative theater the world has ever known. Focusing mainly on Shakespeare's comedies and histories, we'll discover characters who offer us complicated and engaging perspectives on topics such as love, magic, revenge, family relationships, outsiders, and political power. We will work together to appreciate both the nuances of Shakespeare's poetry and the excitement of his works in performance (whether on stage or screen). **Prerequisite(s):** EGL 100 , EGL 101 , EGL 102 , ATH 102 or a score of 5 on AP English Composition or Literature test. **CC:** HUL, HUM, WAC, JLIT

ATH 257 - Shakespeare After 1600

Course Units: 1 Shakespeare in the Age of Trump and Game of Thrones . Crude, grasping villains. Ruthless, conniving women. Countries laid waste by greed and ambition. The best lacking all conviction or all too easily duped. Do Shakespeare's great tragedies prepare us for the worst realities of modern politics and the worst fantasies of modern popular culture? **Prerequisite(s):** EGL 100 , EGL 101 , EGL 102 , ATH 104 or a score of 4 on AP Enlish Language and Literature test. **CC:** HUM, HUL, JCHF, JLIT, WAC

ATH 258 - Renaissance Drama

Course Units: 1 This class will explore how various Renaissance playwrights represented those on the margins of the dominant culture, particularly the malcontent or madman (Marlowe's Jew of Malta; Kyd's The Spanish Tragedy; Marston's The Malcontent), women (Middleton and Dekker's The Roaring Girl, Webster's The Duchess of Malfi, Ford's 'Tis a Pity She's a Whore), the criminal (the anonymous Arden of Faversham), and sometimes the intersection of all three (Jonson's Bartholomew Fair). **Cross-Listed:** EGL 208 **CC:** HUL, HUM

ATH 295H - Theater Honors Independent Project 1

Course Units: 1.0 For the sophomore scholar student who has demonstrated the ability to work independently, this two-term project may be proposed to a sponsoring faculty member. It is expected that this student-initiated project is designed to allow the student to gain experience through independent research, study or practical studies that could not otherwise be gained in the curriculum. Projects must be proposed at least a term in advance. By permission of sponsoring faculty only.

ATH 296H - Theater Honors Independent Project 2

Course Units: 1.0 For the sophomore scholar student who has demonstrated the ability to work independently, this two-term project may be proposed to a sponsoring faculty member. It is expected that this student-initiated project is designed to allow the student to gain experience through independent research, study or practical studies that could not otherwise be gained in the curriculum. Projects must be proposed at least a term in advance. By permission of sponsoring faculty only.

ATH 305 - American Dream on Stage

Course Units: 1.0 This course is an examination of the ways the quest for the American Dream has been portrayed-and frequently critiqued-in plays written by notable American playwrights. From Arthur Miller and Lorraine Hansberry to Lin-Manuel Miranda and Matthew Lopez, playwrights have questioned the promises of our (relatively) young nation: the idea that through positivity and hard work, we can all achieve a life of liberty and happiness. Some of the topics explored in these plays include ideals of American exceptionalism, pulling oneself up by one's bootstraps, individualism, and personal identity. Furthermore, we will work to understand how works from diverse writers address crucial interactions between literature, theatrical performance, race, culture, gender, sexuality, and American society today. **CC:** HUL, HUM, WAC **ISP:** GSWS

ATH 320 - Playwriting: Script to Performance

Course Units: 1.0 This playwriting course will focus on the creation and development of original and adapted dramatic work. Students will study basic techniques of structure, dialogue, character-development, story-telling, theatricality and creative voice. Students will generate and rework scenes in and out of class. As a playwriting lab, students will workshop, critique and help develop each other's craft through creative writing exercises and prompts. The class will conclude with staged readings of polished work. **CC:** HUM, JCAD, JLIT, WAC

ATH 325 - Acting Shakespeare

Course Units: 1.0 The demands of Shakespeare in performance in this class will include active work on scansion, verse structure, rhetoric, language imagery, as well as text analysis and character analysis in a professional discipline of role preparation and rehearsal process for individual (monologue) and partnered (scene) work. It is assumed that the student taking this course is prepared and willing to challenge him/herself in order to become an expressive, creative and informed Shakespearean actor. A variety of contemporary methods of actor training will be reviewed and used as a process of performance preparation. **CC:** LCC, HUM, HUL

ATH 342 - Acting 2

Course Units: 1.0 Students review skills learned in earlier acting classes with a higher degree of emphasis on performance. Professional workshops in acting technique are offered such as Meisner, Chekhov, or Grotowski techniques. Focus is on in-depth textual analysis - discovering in the inner workings of a play, of scenes and monologues and the making of character choices. Students will gain an understanding the work of a professional actor, and the discipline of the theater business. **Prerequisite(s):** ATH 112 or permission of the instructor. **CC:** HUM,

ATH 348 - Global Performance Tradition

Course Units: 1.0 This course is a survey of non western theatrical and performance forms, engaging with practices and traditions from a global perspective. We will examine a variety of traditions likely including
Japanese Noh, Kyogen, Kabuki, and Bunraku; Chinese Xiqu (Chinese opera), Indonesian Wayang and Topeng, Indian Kathakali dance-drama, Persian Ta'ziyeh, Arabian shadow puppetry, Native American Indian Potlatch ceremonies, West African Griot (praise singing), and Caribbean carnival performance and Latin American protest theater. To conduct our examinations of these diverse traditions, we will read firsthand accounts, critical and theoretical literature, and theatrical texts, and interrogate the intersections between these performance traditions and social culture, including both political structures and religious ceremony and ritual. **CC:** LCC, HUL, JCHF, JLIT, WAC, WAC-R **ISP:** AIS, REL

ATH 361 - Advanced Directing

Course Units: 1.0 An advanced course in techniques of working with script, actor, and designer in realizing a theatrical event on stage. Final project to be directed for public performance. **Prerequisite(s):** ATH 151 **CC:** HUM

ATH 366 - Acting Styles

Course Units: 1.0 This class is about how an actor can transform poetic and heightened language and make it seem natural. It is designed for the serious student as a continuation of their acting training and to provide a means to understanding classical and highly stylized theater. The class will include intensive sessions covering a varied range of acting styles across the history of theater. Close analysis of specific theater texts including Greek Theater, Shakespeare, French Comedy, and Absurdism, among others. We will be examining both traditional and unconventional approaches to presenting performances. Being prepared, doing work outside of class, seeing other performances, keeping a rehearsal journal, and turning in a written critical analysis will be required. **Prerequisite(s):** ATH 342 or permission of the instructor. **CC:** LCC, HUM

ATH 370 - Theater Internship

Course Units: 1.0 As a professional work/study experience, students can elect to pursue a specific area of interest in a one-term internship with a professional theater or dance company. The precise form of this project will vary with the student and area of focus within the department, but may include production, performance, management, or administrative work in the field or other projects approved by the faculty. Appropriate credit is granted upon completion of the internship. This course will be taken Pass/Fail. An appropriate Departmental faculty member will be assigned to oversee the internship. Students planning on applying for ATH 370 Theater Internship or ADA 370 Dance Internship approval will be expected to complete a Departmental form which must be submitted to the Chair ideally no later than the fifth week of the term prior to the internship term. Appropriate advisement and guidance will be available to the student. **Cross-Listed:** ADA 370 **Prerequisite(s):** Sophomore standing and approval of Departmental Chair.

ATH 490 - Theater Independent Study 1

Course Units: 1.0 For the junior or senior student who has demonstrated the ability to work independently, this one term project may be proposed to a sponsoring faculty member. It is expected that this student-initiated project is designed to allow the student to gain experience through independent research, study or practical studies that could not

otherwise be gained in the curriculum. Projects must be proposed at least a term in advance. By permission of sponsoring faculty only.

ATH 491 - Theater Independent Study 2

Course Units: 1.0 For the junior or senior student who has demonstrated the ability to work independently, this one term project may be proposed to a sponsoring faculty member. It is expected that this student-initiated project is designed to allow the student to gain experience through independent research, study or practical studies that could not otherwise be gained in the curriculum. Projects must be proposed at least a term in advance. By permission of sponsoring faculty only.

ATH 492 - Theater Independent Study 3

Course Units: 1.0 For the junior or senior student who has demonstrated the ability to work independently, this one term project may be proposed to a sponsoring faculty member. It is expected that this student-initiated project is designed to allow the student to gain experience through independent research, study or practical studies that could not otherwise be gained in the curriculum. Projects must be proposed at least a term in advance. By permission of sponsoring faculty only.

ATH 493 - Theater Independent Study 4

Course Units: 1.0 For the junior or senior student who has demonstrated the ability to work independently, this one term project may be proposed to a sponsoring faculty member. It is expected that this student-initiated project is designed to allow the student to gain experience through independent research, study or practical studies that could not otherwise be gained in the curriculum. Projects must be proposed at least a term in advance. By permission of sponsoring faculty only.

ATH 494 - Stage Management: Theater Independent Study

Course Units: 1.0 For the student who has demonstrated the ability to work independently, this one term project may be proposed or is assigned in conjunction with Stage Management duties for a faculty-directed term production. Students are generally expected to have successfully completed a practicum credit as an assistant stage manager prior to requesting this independent study. Projects are assigned or must be proposed at least a term in advance. By permission of faculty only. **Prerequisite(s):** Prior Completion of ATH 052 or ATH 124 and Instructor permission required.

ATH 497 - Theater One Term Senior Project

Course Units: 1.0 As a requirement of the major, students propose this one-term project as a "capstone" study in an area of concentration in theater studies. This project is designed in consultation with the faculty Coordinator of Senior Projects and must be proposed at least a term in advance. Projects may include research, practical production experience or independent projects in theater. **Prerequisite(s):** By permission of the faculty. **CC:** WAC/S, WS

TAB 341T - London Theater Mini-Term

Course Units: 1.0 In this intensive three-week experience in London, students will experience this vibrant, multi-cultural hub of the world. We will see nine or more theatrical productions and other performances in three weeks; while visiting markets, museums, parks, architecture and historic sights. Through backstage tours and professional workshops, students will experience the world of a production from the point of view of audience, performers, directors, choreographers, and designers. Coursework involves short writing assignments, journal entries, group discussions, and a brief critical review of the productions attended. **CC:** HUM, HUL, JCAD, JCHF, JLIT

Studio Arts

AVA 110 - Drawing 1

Course Units: 1.0 Explore ways of responding to and recording perception through a variety of drawing media. Topics include effective use of line, mass, value, perspective, and composition, with an emphasis on observational drawing. Outside work is required; weekly critiques **CC:** HUM, JCAD

AVA 120 - Photography 1 - Black and White Darkroom

Course Units: 1.0 Consider how many times a day you look at a photograph, take a photograph, send or post a photograph. In this course we will develop techniques in creating and reading one of our most prevalent means of communication, photography. Through a rigorous introduction to the techniques of analog film photography and the chemical black and white darkroom we will consider how photography as a medium presents a unique way of looking at the world. We will use these technical skills to develop poetic voices with which to present our own stories, perspectives, and ideas. This course has three main goals: to understand and demonstrate the techniques of analogue photography, to develop an artistic voice using photography, and to practice the synthesis of these techniques and ideas. Limited enrollment, by permission of instructor. **CC:** HUM **ISP:** FLM

AVA 130 - Sculpture 1

Course Units: 1.0 A beginning course that introduces basic sculptural vocabularies and techniques, with an emphasis on the individual student's development. Each project is linked to particular materials, methods and approaches to making sculpture. These include modeling in clay, making life molds and plaster casts, wood construction, and stone carving. Informal slide talks cover important developments in twentieth-century sculpture. We'll take a field trip to New York City, Mass MOCA or Storm King Art Center to see contemporary work up close. Regular work in and outside of class is required. No previous experience necessary. **CC:** HUM

AVA 140 - Three Dimensional Design 1

Course Units: 1.0 An introduction to the essential elements of form, space, structure and materials, with an emphasis on individual creative solutions. Class projects and discussions involve the nature and design of useful or functional objects, architectural form and space, and designing in an existing urban context. Course material moves from abstract design concepts to hands-on interaction with materials and application of principles to real-world situations. Projects for each student include conceiving and constructing a unique chair, and designing and building a proposal model for an imaginary "monument" on campus. We'll use various materials including clay, wood, plaster, and mixed media. Work in and outside class is required; slide talks, field trips to museums or other resources, and class critiques are part of the class. No previous experience necessary **CC:** HUM

AVA 150 - Relief Printmaking

Course Units: 1.0 In this course students discover the rich possibilities of image creation through traditional and contemporary relief techniques. Markmaking, layering, and play is emphasized through a series of projects that explore the possibilities of black and white, multi-block, and reductive methods. Students are encouraged to peruse their individual aesthetic and conceptual interests. Study includes diverse investigations into the evolution and historical significance of each process as well as contemporary trends in the ever- expanding vocabulary of printmaking. Open to beginning and advanced students from any major. This course requires work outside of class and participation in group critiques. **CC:** HUM, JCAD

AVA 151 - Intaglio Printmaking

Course Units: 1 Explore the history and practice of intaglio printmaking, a technique that involves printing from an incised surface. Students will experiment with drypoint and etching to create unique images that are hand printed on a manual press. Emphasis is placed on skill development, experimentation, and conceptual expansion. Projects leave room for students to explore their individual interests while cultivating their unique creative voice. Open to beginning and advanced students from any major. This course requires work outside of class and participation in group critiques. **CC:** HUM

AVA 160 - Digital Art

Course Units: 1.0 This introductory course focuses on the fundamentals of using the computer as an art tool in the production of two-dimensional content. Topics covered include essentials of digital imaging, digital printing, and posting information to the Internet. Class lectures and hands-on studio will incorporate technique demonstrations, discussions, technical exploration, aesthetic inquiry and historical information relevant to computer multimedia, hypermedia and telecommunications. Students are encouraged to pursue areas of interest and explore new ideas throughout the course. Outside work required. No previous experience necessary. **CC:** HUM **ISP:** FLM

AVA 210 - Drawing 2

Course Units: 1.0 This course builds on the foundational skills acquired from Drawing I, or from advanced high school studio art. Discussions and class critiques center on solving visual problems, interpreting meaning in historical and contemporary drawings and communicating complex visual ideas. Students will continue to hone their perceptual drawing skills, while being encouraged to develop their personal voice as artists, which may or may not depend on representational approaches of expression. We will work from still life, interior and exterior environments, and the figure, and engage themes ranging from personal identity and difference to complex cultural and political narratives. Individual direction is encouraged. This course requires significant outside work, critical thinking, discussion, collaboration, and group critiques. **Prerequisite(s):** AVA 110 , AVA 212 , or instructor's permission. Students with significant previous drawing experience may apply to place into Drawing 2 as their introductory drawing credit. Please contact the department chair to arrange a portfolio review. **CC:** HUM, JCAD

AVA 212 - Narrative Drawing

Course Units: 1 Humans have been using drawing to tell stories for over 30,000 years, long before the invention of writing. In this course we will expand upon materials and methods introduced in Drawing 1, with an emphasis on narrative and expression. Students will begin to cultivate their own relationships to drawing in regard to mark-making, form, movement, composition, and illustration. Topics will include psychology of space, personal and political narratives, the costumed figure, time-based media, and drawing in response to film, literature, and music. Readings, outside projects, and group critique are required. A variety of dry and wet media will be explored including graphite, charcoal, ink, gesso, collage, and pastel.This course satisfies the Introductory Drawing requirement for the Studio Fine Arts major or minor. **Prereq/Corequisite(s):** AVA 100 , AVA 110 , AVA 215 , AVA 260 , AP Studio Art or instructors permission. **CC:** HUM, JCAD

AVA 215 - Life Drawing

Course Units: 1.0 An intensive study of the human figure with live models. Students will explore issues of form, structure, anatomy, volume, movement, composition, and expressive possibilities. Outside work will be required; weekly critiques. **Prerequisite(s):** The following courses are recommended but not required: AVA 100 , AVA 110 , AVA 150 , AVA 251 , AVA 345 or by instructor permission. **CC:** HUM, JCAD

AVA 220 - Photography 2 - Intermediate Photography

Course Units: 1.0 Building on the technical skills developed in Photography I this course begins with advanced film photography and progresses through an introduction to digital photography with a focus on the development of a long term, in depth photography project. In the traditional darkroom we will explore low light film photography using high ISO film and on camera flash concluding the analogue portion of the course with an introduction to color film. Moving to the digital darkroom we will become acquainted with DSLR cameras and digital workflows using the Adobe Creative Suite and concluding in the production of inkjet prints. Throughout these technical explorations we will explore contemporary and canonical examples of long term projects spending much of the term developing our own in-depth bodies of work. **Prerequisite(s):** AVA 120; limited enrollment, by permission of the instructor. **CC:** HUM **ISP:** FLM

AVA 230 - Sculpture 2

Course Units: 1.0 A complementary experience to Sculpture I or Three- Dimensional Design I. Includes welded steel, more advanced techniques in wood, and other media. Specific class projects aim to develop fluency with materials and concepts. Individual work expected and encouraged. **Prerequisite(s):** AVA 130, AVA 140, or permission of the instructor. **CC:** HUM

AVA 235 - Digital Fabrication and Computational Craft

Course Units: 1 This intermediate/advanced sculpture course will build on skills developed in previous studio art and/or related interdisciplinary design courses. Students will learn to use CAD, 3D modeling and other design software packages and will work independently to develop and refine physical objects of art using advanced digital fabrication processes including laser cutting, CNC milling and waterjet cutting. Students will create and refine iterations, test materials and test different fabrication strategies, in order to design and fabricate a series of 4 sculptural works they will present in places. **Prerequisite(s):** Any studio art course, MER 101 , CEE 101 or instructors consent. **CC:** HUM

AVA 240 - Three-Dimensional Design 2

Course Units: 1.0 A continuation of Three- Dimensional Design I, with emphasis on design and construction of chairs. The chair as structure; necessity; aesthetic object. Function, decoration, metaphor. Relationship of design to the human body. Each class member will construct three functioning chairs. **Prerequisite(s):** AVA 130 or AVA 140, or permission of the instructor. **CC:** HUM

AVA 252 - Experimental Printmaking

Course Units: 1 In this course we explore techniques and concepts that augment traditional methods of printmaking. Students survey a variety of alternative printmaking methods and develop self-directed projects around each unit of study. We examine the potential of print to create unique pieces that crossover with concepts of drawing, painting, collage, photography, and sculpture. Some methods covered are monoprints, collagraphs, and cyanotypes. This course is for students who have previous printmaking experience and are interested in multimedia, non-traditional methods, and pushing the boundaries of works on paper. **Prereq/Corequisite(s):** AVA 150 , AVA 251 , or permission of the instructor. **CC:** HUM

AVA 260 - Painting: Oil

Course Units: 1.0 An introduction to basic principles and techniques of oil painting, color, and composition. Integration of drawing and design concepts are emphasized as we investigate color theory, value, temperature, articulation of form, mark-making, and spatial relationships. Through slide talks, discussions, in-class work, and home assignments, this class will expose you to the rich history of painting, its role in contemporary culture, and your own personal relationship to the medium. Substantial outside work and group critiques are required in this course. Prerequisites: a college-level introductory studio course, or portfolio review and permission of the instructor. **Prerequisite(s):** A

college-level introductory studio art course, two-dimensional or three-dimensional media, or portfolio review and permission of the instructor. AVA 110 , AVA 215 or AVA 261 highly recommended. **CC:** HUM

AVA 261 - Painting: Watercolor

Course Units: 1.0 Introduction to varied approaches of water-based painting with emphasis on color, composition, and spatial representation. In addition to traditional watercolor and gouache, we will make our own colored inks and watercolors from foraged materials. Experimentation is encouraged. a college-level introductory studio course, or portfolio review and permission of the instructor. **Prerequisite(s):** AVA 110 , AVA 215 or AVA 260 . **CC:** HUM

AVA 262 - Real and Recorded Time - 4D Art

Course Units: 1.0 This course will serve as an introduction to the basic concepts of four-dimensional art or time-based artwork, using a variety of processes and media. Students explore concepts in animation techniques, video and audio production, editing, interactivity, installation, and documentation. Class lectures and hands-on studio time will incorporate technique demonstrations, screenings, readings, discussions, technical exploration, aesthetic inquiry and historical information relevant to the course. Outside work is required. **Prerequisite(s):** Any Studio Art course or permission of instructor. **CC:** HUM **ISP:** FLM

AVA 270 - The Processed Pixel

Course Units: 1.0 Utilizing basic aspects of computer programming, this course will explore how artists can experiment with computer code to communicate a variety of ideas and content. By means of the programming environment processing, students will investigate issues in animation, computational design, physical computing, data visualization, interactivity, and other relevant topics. Class lectures and hands-on studio time will incorporate technique demonstrations, discussions, technical exploration, aesthetic inquiry and historical information relevant to the course. Outside work required. **Cross-Listed:** CSC 112 **Prerequisite(s):** Any Studio Art course or permission of instructor. **CC:** SET, HUM

AVA 282 - Digital Aesthetics

Course Units: 1.0 Through this intensive Digital Art course, students will learn how to navigate the complex and rich world of computer aided graphic design. Using Adobe Illustrator, Adobe After Effect, InDesign and several input and output techniques, students will gain experience in a variety of industry standard topics. These will include logo design, branding, information architecture, package design, webpage aesthetics, kinetic typography and the history of computer aided graphic design. **Prerequisite(s):** Any Visual Arts course. AVA 160 highly recommended or permission of the instructor. **CC:** HUM

AVA 295H - Visual Arts Honors Independent Project 1

Course Units: 1.0

AVA 296H - Visual Arts Honors Independent Project 2

Course Units: 1.0

AVA 310 - Experimental Drawing

Course Units: 1 This course is for students with previous drawing experience who wish to subvert the standards of conventional drawing by placing focus on the act rather than the product. Through experimenting with non-traditional

materials, provocative exercises, and conceptual challenges, students will expand the act of drawing to echo their aesthetic interest and spark play. They will develop a personalized practice through daily artistic exercises that result in unpredictable discoveries and expand their notion of art making. Projects will experiment with materials, space, and time. **Prerequisite(s):** AVA 110 , AVA 210 , AVA 212 , AVA 215 or permission of the instructor. **CC:** HUM

AVA 320 - Photography 3: Advanced Projects in Photography

Course Units: 1.0 This course has four main goals: to understand and demonstrate advanced techniques of analogue and digital photography, to understand and demonstrate advanced techniques of photographic printing, to hone and further develop an artistic voice using photography, and to practice the synthesis of these techniques and ideas to create a robust portfolio project. Students will work on self directed long term projects culminating in the production of a finely honed and printed portfolio and digital presentation of photgraphs. **Prerequisite(s):** Photography II or permission of instructor; limited enrollment. Digital camera required. **CC:** HUM **ISP:** FLM

AVA 325 - The Photo Book

Course Units: 1 This studio course examines how photography works in sequence. We will explore the history and contemporary context of photography books while honing skills in editing, sequencing, and designing concluding in the production of our own photo books. Photographers look through the cameras at the world developing keen skills of perception in that undertaking-engaging deeply in every aspect of our social, private, political, emotional, and physical worlds. Photo books are a compelling format for expressing these experiences
and we will consider them as objects, means of distribution, and structures. **CC:** HUM **ISP:** FLM

AVA 330 - Sculpture 3

Course Units: 1.0 Advanced exploration of techniques, materials, and concepts of sculpture. Emphasis on development of individual student's work. **Prerequisite(s):** AVA 230, or permission of the instructor. **CC:** HUM

AVA 345 - The Illustrated Organism

Course Units: 1.0 This studio course is the cross-section of common themes found in fine arts and biology, using art as a way of exploring science. The biological question of how evolution influences the relationship between structure and function will be addressed by exploring the use of color, light and structural logic with the goal of creating a world of your own. The course will culminate in an exhibition of artwork with corresponding texts by the student artists describing the connection between the art and science. Taught jointly by biology and visual arts. Apply
through participating departments. **Cross-Listed:** BIO 345 **CC:** HUM, SCLB **ISP:** ENS

AVA 350 - Advanced Printmaking

Course Units: 1.0 A course for those ready to explore more technically challenging printmaking processes and further develop their artistic voice. Students propose a thematic intention they pursue through the course which will culminate in a conceptually and aesthetically coherent portfolio and artist statement. The body of work will be developed through 3 methods chosen collectively by the class. These methods could include chine colle, stone lithography, litho alternatives, and photo processes. Course will include in-depth discussions of personal aesthetic, creative process, and peer workshops. Open to students with previous printmaking experience. **Prerequisite(s):** AVA 150, AVA 151 or permission of instructor. **CC:** HUM

AVA 353 - The Poetic Object

Course Units: 1 This course will explore the intersection between poetry and visual arts as a space for literary artistic production. Through demonstration and assignments students will write poetry and create prints and objects that

integrate visual and textual elements. Students will practice combining structure, visual, and textual content in meaningful ways. **Cross-Listed:** EGL 243 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test or AVA 150 ,or AVA 251 or AVA 252 or instructor's permission **CC:** HUM

AVA 360 - Advanced Painting

Course Units: 1.0 Emphasis on refining individual direction with respect to ideas of composition, content, and media. Stylistic development is stressed. Outside work required, critiques. **Prerequisite(s):** AVA 260 , AVA 261 , AVA 365 or permission of the instructor must be completed prior to taking this course. **CC:** HUM

AVA 363 - 3D Computer Modeling

Course Units: 1.0 This course will introduce students into the world of three-dimensional computer graphics. Through this hands-on-course, students will learn how to use 3D software to realize ideas in sculpture, virtual environments, 3D modeling, installation, and rapid prototyping. Class lectures and hands-on studio time will incorporate technique demonstrations, discussions, technical exploration, aesthetic inquiry and historical information relevant to the course. Software covered: Cinema 4D, Poser, and Adobe After Effects. Outside work required. **Prerequisite(s):** AVA 160 or AVA 320 or permission of instructor. **CC:** HUM **ISP:** FLM

AVA 365 - Plein Air Painting

Course Units: 1 The invention of portable easels and paint in tubes sparked a radical move outside for the Impressionists and Hudson Valley Painters of the 19th century. But while plein air painting may have made its mark two centuries ago, it's still alive and well today. Today, many contemporary painters are again ditching their studio walls for the immersive experience of painting in the great outdoors. Working directly from life, outside, we will more deeply and personally understand principles of color theory, value, temperature, mark-making, composition, and spatial relationships with oil paint. **Prerequisite(s):** AVA 260 , AVA 261 or permission of the instructor. **CC:** HUM

AVA 370 - Robotic Art

Course Units: 1.0 This studio art course will explore the creation of robotic art, interactive art, kinetic sculpture, sound works, light art, and performance environments. Using the Arduino micro-controller and basic electronic techniques, the course will include lectures, hands-on studio time, technique demonstrations, discussions, technical exploration, aesthetic inquiry and historical information relevant to the course. Outside work required. **Prerequisite(s):** Any Visual Arts course or permission of instructor. **CC:** HUM

AVA 380 - The Floating World: Edo Prints and Printmaking

Course Units: 1.0 Students will produce a portfolio of woodblock prints based on an exploration of the history of Japanese prints during the Edo period (1603-1867). Ukiyo-e, or "floating-world pictures," depicted the urban pleasures offered in the imperial capital Edo (modern-day Tokyo). The themes and individual artistic styles, first studied, then interpreted by the students in their prints, include: cityscapes and landscapes; representations beautiful men and women in bijinga; the exotic encounter with the west; and explicit erotic imagery. **Cross-Listed:** AAH 380 **CC:** LCC, HUM **ISP:** AIS

AVA 400 - Special Projects in Photography

Course Units: 1.0 Students accepted to this class will propose special project ideas to work on for the term. This is a self-initiated experience working closely with the professor throughout. Work may be in any photographic media or combined with other disciplines or contexts. Students will also research the aesthetics and ideas of relevant historical

and contemporary photographers. Digital or film camera required. **Prerequisite(s):** AVA 320 or permission of instructor. **CC:** HUM

AVA 405 - Special Projects in Painting

Course Units: 1.0 Continued study of painting at the advanced level, incorporating exploration of techniques, materials, and expanded concepts. Matters of scale and the evolution of individual direction are emphasized through group and individual critiques. **Prerequisite(s):** AVA 260, AVA 261, AVA 365 or permission of the instructor. Special exclusions: may not be taken simultaneously with AVA 497, AVA 498, or AVA 499. **CC:** HUM

AVA 410 - Drawing Independent Study 1

Course Units: 1.0

AVA 411 - Drawing Independent Study 2

Course Units: 1.0

AVA 412 - Drawing Independent Study 3

Course Units: 1.0

AVA 413 - Drawing Independent Study 4

Course Units: 1.0

AVA 414 - Drawing Independent Study 5

Course Units: 1.0

AVA 415 - Drawing Independent Study 6

Course Units: 1.0

AVA 416 - Drawing Independent Study 7

Course Units: 1.0

AVA 417 - Drawing Independent Study 8

Course Units: 1.0

AVA 418 - Drawing Independent Study 9

Course Units: 1.0

AVA 419 - Drawing Independent Study 10

Course Units: 1.0

AVA 420 - Photography Independent Study 1

Course Units: 1.0 Students who have a demonstrated ability to work independently and who propose a specific project may do an independent course of study in photography (either black & white or digital color). A journal, written assignments, weekly meetings and final portfolio are required. Students must submit a written proposal well in advance of pre-registration to be considered. **Prerequisite(s):** At least three photography courses at Union or permission of the instructor.

AVA 421 - Photography Independent Study 2

Course Units: 1.0

AVA 422 - Photography Independent Study 3

Course Units: 1.0

AVA 423 - Photography Independent Study 4

Course Units: 1.0

AVA 424 - Photography Independent Study 5

Course Units: 1.0

AVA 425 - Photography Independent Study 6

Course Units: 1.0

AVA 426 - Photography Independent Study 7

Course Units: 1.0

AVA 427 - Photography Independent Study 8

Course Units: 1.0

AVA 428 - Photography Independent Study 9

Course Units: 1.0

AVA 429 - Photography Independent Study 10

Course Units: 1.0 **(TBD: Staff)**

AVA 430 - Sculpture Independent Study 1

Course Units: 1.0

AVA 431 - Sculpture Independent Study 2

Course Units: 1.0

AVA 432 - Sculpture Independent Study 3

Course Units: 1.0

AVA 433 - Sculpture Independent Study 4

Course Units: 1.0

AVA 434 - Sculpture Independent Study 5

Course Units: 1.0

AVA 435 - Sculpture Independent Study 6

Course Units: 1.0

AVA 436 - Sculpture Independent Study 7

Course Units: 1.0

AVA 437 - Sculpture Independent Study 8

Course Units: 1.0

AVA 438 - Sculpture Independent Study 9

Course Units: 1.0

AVA 439 - Sculpture Independent Study 10

Course Units: 1.0

AVA 450 - Printmaking Independent Study 1

Course Units: 1.0

AVA 451 - Printmaking Independent Study 2

Course Units: 1.0

AVA 452 - Printmaking Independent Study 3

Course Units: 1.0

AVA 453 - Printmaking Independent Study 4

Course Units: 1.0

AVA 454 - Printmaking Independent Study 5

Course Units: 1.0

AVA 455 - Printmaking Independent Study 6

Course Units: 1.0

AVA 456 - Printmaking Independent Study 7

Course Units: 1.0

AVA 457 - Printmaking Independent Study 8

Course Units: 1.0

AVA 458 - Printmaking Independent Study 9

Course Units: 1.0

AVA 459 - Printmaking Independent Study 10

Course Units: 1.0

AVA 460 - Painting Independent Study 1

Course Units: 1.0

AVA 461 - Painting Independent Study 2

Course Units: 1.0

AVA 462 - Painting Independent Study 3

Course Units: 1.0

AVA 463 - Painting Independent Study 4

Course Units: 1.0

AVA 464 - Painting Independent Study 5

Course Units: 1.0

AVA 465 - Painting Independent Study 6

Course Units: 1.0

AVA 466 - Painting Independent Study 7

Course Units: 1.0

AVA 467 - Painting Independent Study 8

Course Units: 1.0

AVA 468 - Painting Independent Study 9

Course Units: 1.0

AVA 469 - Painting Independent Study 10

Course Units: 1.0

AVA 470 - Studio Internship 1

Course Units: 1.0 A student who has largely fulfilled the requirements for a concentration in studio visual arts may apply to the department to pursue an internship with a studio visual arts related professional business, art center, gallery or artist's studio. This is a student-initiated experience where the student proposes the internship, seeks faculty sponsorship, and obtains the chair's approval. An internship application is required to be completed by the student and approved by the department prior to preregistration for the term of the intern opportunity.

AVA 471 - Studio Internship 2

Course Units: 1.0 A student who has largely fulfilled the requirements for a concentration in studio visual arts may apply to the department to pursue an internship with a studio visual arts related professional business, art center, gallery or artist's studio. This is a student-initiated experience where the student proposes the internship, seeks faculty sponsorship, and obtains the chair's approval. An internship application must be completed by the student and approved by the department prior to preregistration for the term of the intern opportunity.

AVA 480 - Digital Art Independent Study

Course Units: 1.0

AVA 497 - Studio Senior Project

Course Units: 1.0 A one-term project requiring studio faculty sponsorship. A project carried out in the student's area of studio concentration with optional participation in spring Senior Exhibition. **CC:** WS credit possible with completion of an additional written research paper.

AVA 498 - Visual Arts Honors Senior Thesis 1

Course Units: 0.0 A two-term studio project requiring studio faculty sponsorship and participation in the spring Senior Exhibition. (See preceding information on Departmental Honors and WS requirements.)

AVA 499 - Visual Arts Senior Honors Thesis 2

Course Units: 2.0 A two-term studio project requiring studio faculty sponsorship and participation in the spring Senior Exihibition. (See preceding information on Departmental Honors and WS requirements.) **CC:** WS

Biochemistry

BCH 335 - Survey of Biochemistry

Course Units: 1.0 A survey of topics in biochemistry including the structure, conformation, and properties of the major classes of biomolecules (proteins, nucleic acids, lipids, and carbohydrates); enzyme mechanisms, kinetics, and regulation; metabolic transformations; and bioenergetics and metabolic control. Emphasis will be on the fundamentals of biochemistry and our current understanding in the field. **Cross-Listed:** BIO 335 and CHM 335 **Prerequisite(s):** BIO 205 and CHM 231 **Prereq/Corequisite(s):** Not open to students who have completed either BCH 380 or BCH 382 .

BCH 380 - Biochemistry: Nucleic Acids, Carbohydrates, and Lipids

Course Units: 1.0 An in-depth investigation into some of the macromolecules which are essential to life's processes. The course focuses on non-protein molecules and their unique chemical properties. **Cross-Listed:** BIO 380 **Prerequisite(s):** BIO 205 and CHM 232 or permission of the instructor. **Corequisite(s):** BCH 380L **Prereq/Corequisite(s):** Not open to students who have completed BCH 335 **CC:** WAC **Lecture/Lab Hours** Three lab hours each week.

BCH 382 - Biochemistry: Structure and Catalysis

Course Units: 1.0 Structure and function of proteins/enzymes including purification, mechanism, kinetics, regulation, metabolism, and a detailed analysis of several classic protein systems. **Cross-Listed:** BIO 382 and CHM 382 **Prerequisite(s):** CHM 232 **Corequisite(s):** BCH 382L **Prereq/Corequisite(s):** Not open to students who have completed BCH 335 . **CC:** SCLB, WAC-R **Lecture/Lab Hours** Four lab hours each week.

BCH 385 - Advanced Topics in Biochemistry

Course Units: 1 Students will develop the ability to read and understand the biochemical literature while learning about modern methods for probing biochemical functions. **Prereq/Corequisite(s):** BIO 380 , BCH 380 , BCH 382 , or CHM 382

BCH 491 - Biochemistry Research 1

Course Units: 1.0 Requires a thesis based on original scientific research under the direction of a member of the faculty. May be used to satisfy the departmental component for honors in biochemistry and/or to satisfy WS requirements. Expectations include a minimum of twelve hours per week of lab work and attendance at chemistry or biology weekly seminar, in addition to other requirements to be determined by individual research advisors. **Prerequisite(s):** Permission of the instructor and third-term junior standing; or permission of the department chair.

BCH 492 - Biochemistry Research 2

Course Units: 1.0 Requires a thesis based on original scientific research under the direction of a member of the faculty. May be used to satisfy the departmental component for honors in biochemistry and/or to satisfy WS requirements. Expectations include a minimum of twelve hours per week of lab work and attendance at chemistry or biology weekly seminar, in addition to other requirements to be determined by individual research advisors. **Prerequisite(s):** Permission of the instructor and third-term junior standing; or permission of the department chair. **CC:** WS

BCH 493 - Biochemistry Research 3

Course Units: 1.0 Requires a thesis based on original scientific research under the direction of a member of the faculty. May be used to satisfy the departmental component for honors in biochemistry and/or to satisfy WS requirements. Expectations include a minimum of twelve hours per week of lab work and attendance at chemistry or biology weekly seminar, in addition to other requirements to be determined by individual research advisors. **Prerequisite(s):** Permission of the instructor and third-term junior standing; or permission of the department chair.

Biological Sciences

BIO 025 - Medical Racism

Course Units: 1 This course explores and debunks the historical concept of race as a biologically meaningful category, especially in the context of genetics, evolution, and medicine. First, we will examine race from a biological standpoint using superficial traits, such as skin pigmentation and hair. We will look at the biological history of racism ever since Carl Linnaeus defined races in 1758. Next, how do these categories impact present-day medical decisions? Finally, we will consider how this history impacts the future of medicine. **Corequisite(s):** BIO 025L **CC:** SCLB, JNPS **Lecture/Lab Hours** One lab every other week

BIO 050 - Topics in Contemporary Biology

Course Units: 1.0 Recent developments in biology are pertinent to human health and to concerns of the nature of life and of human social values. This course will focus on human genetics, human genetic diseases, the genetic component of other diseases, the genetics of cancer, and the immune system. **Corequisite(s):** BIO 050L **CC:** SCLB **Lecture/Lab Hours** One lab every other week. **ISP:** STS

BIO 058 - Astrobiology

Course Units: 1.0 Does life exist elsewhere in the universe or are we alone? The emerging science of astrobiology attempts to answer this fundamental question using an interdisciplinary approach rooted in both biology and astronomy. This course will examine the current state of our scientific knowledge concerning the possibility of life elsewhere in the universe. Topics include the nature and origin of life on Earth, the possibility of life on Mars and elsewhere in the solar system, the search for extra solar planets, the habitability of planets, and the search for extraterrestrial intelligence. **Cross-Listed:** AST 058 **CC:** SET **ISP:** STS

BIO 064 - Biodiversity

Course Units: 1.0 Habitat degradation, global change and biodiversity loss threaten natural ecosystems. This course examines our scientific understanding of ecology, genetics and evolution to investigate how these areas of study are applied to develop management strategies to mitigate environmental threats. We will draw upon historical and modern

examples from the Albany Pine Bush, Adirondacks, National Parks and endangered species. **Corequisite(s):** BIO 064L **CC:** SCLB **Lecture/Lab Hours** One lab every other week.

BIO 077 - Technology of Biology

Course Units: 1.0 Advances in technology have been utilized by scientists and physicians for many centuries. Today, with the rapid developments in molecular biology, the technology often outpaces the understanding and acceptance of the public. This course will look at technological advances relating to biology from both a historical and modern perspective, with an emphasis on how molecular biology has revolutionized our lives. Medical, environmental, and industrial topics will be included. **Prereq/Corequisite(s):** Not open to students that have already completed BIO 103 or BIO 104 **CC:** SET **ISP:** STS

BIO 088 - Cyborgs!

Course Units: 1 Cybernetic organisms, or "cyborgs," represent the ultimate integration of biology and technology since these organisms living with abiotic parts. This exciting new interdisciplinary course will provide an introduction to the biological and computer science concepts fundamental to the development of cyborg technology as well as critical evaluation of the consequences of introducing such technology in society. Students taking this course will not just be trained how to develop cyborg technology, but whether or not such technology should be developed for society. **Cross-Listed:** CSC 088 **Corequisite(s):** BIO 088L **CC:** HUL, HUM, SCLB, SET GDQR, GETS, GLIT, GNPS, WAC

BIO 094 - Understanding Cancer

Course Units: 1.0 Everyone has been touched at some point in their lives by cancer. This course aims to provide insight into the fundamental concepts involved in the life cycle of a cell, how cancer is related to those processes, and how those fundamental processes have led to advances in cancer treatment. **Prereq/Corequisite(s):** Not open to students who have already completed BIO 103 or BIO 104 **CC:** SET **ISP:** STS

BIO 103 - Diversity of Life: Heredity, Evolution, and Ecology

Course Units: 1.0 More than 3.5 billion years of evolution have resulted in the astonishing diversity of life on earth. This course will explore biodiversity through the lens of ecology, evolution, and heredity, and will investigate various topics, including: the history of life on Earth, evolutionary change, Mendelian & non-Mendelian inheritance, as well as human impacts on biodiversity and ecological functioning. These processes will be studied in the lab using animal model systems, computer simulations, observations of diversity, and molecular techniques. Students will learn experimental design, data analysis, scientific writing, and various laboratory skills during weekly lab sessions. **Corequisite(s):** BIO 103L **CC:** SCLB, GNPS **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 104. **ISP:** ENS

BIO 104 - Cellular Foundations of Life

Course Units: 1.0 The cell is the basic unit of life. From single-celled to multicellular organisms, the cell must transform energy to survive, interact with its environment and reproduce itself. Different types of cells have different functions, and those specialized functions are exhibited in the signals they send and receive, the genes they express and ultimately the biochemical reactions they regulate. Thus, the arrangement and actions of biologically important molecules organize into functioning cellular systems and work together to carry out these important life processes. Required weekly laboratory sessions will introduce students to important tools and methods used by biologists and employ them to investigate biochemical and cellular processes and develop skills with scientific investigation including distinguishing theories and hypotheses, generating and testing hypotheses and analyzing data. **Corequisite(s):** BIO 104L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 103.

BIO 205 - Topics in Molecular Biology

Course Units: 1.0 In this sophomore level course, students will learn the key concepts of the molecular biology of the cell as well as how to integrate the principles of cell structure and function with the underlying molecular mechanism(s). Discussions will focus on gene structure, mechanisms of replication, transcription and translation, mutation and DNA repair, gene regulations, and genomics. Each of these concepts will be discussed in the context of a unifying theme selected by the instructor. Possible examples of these themes include viruses, epigenetics, human diseases, biotechnology and artificial organisms, cell fate determination and differentiation. **Prerequisite(s):** BIO 103 and BIO 104 . **CC:** SET **Note:** May not be taken simultaneously with BIO 206.

BIO 206 - Topics in Physiology

Course Units: 1.0 Cells are organized into tissues, organs, and organ systems, which carry out functions of energy storage and transformation, transport, signaling, and the regulation of internal conditions. These functions arise from activities and interactions that span different levels of the organizational hierarchy. This sophomore level course will focus on how physiological processes arise and are controlled and why these mechanisms have evolved. This course will also demonstrate how physiology can help bridge understandings between molecular/cellular biology and ecology/evolutionary biology. **Prerequisite(s):** BIO 103 and BIO 104 . **CC:** SET **Note:** May not be taken simultaneously with BIO 205.

BIO 208 - Paleontology

Course Units: 1.0 Nearly all species that have existed on Earth are now extinct and are only known through the fossil record. This course examines the evolution and history of life on Earth as interpreted from the fossil record. Topics include fossil preservation, taphonomy, ontogeny, diversity trajectories through geologic time, evolutionary mechanism, extinction, paleobiology, paleoecology, and paleoclimate. Special emphasis will be placed on using fossils to interpret ancient environments as well as deciphering past climates. This course focuses on the fossil record of marine invertebrates, but major groups of vertebrates (such as dinosaurs) and plants are also covered. **Cross-Listed:** GEO 208 **Corequisite(s):** BIO 208L **CC:** SCLB

BIO 210 - Neuroscience: Mind & Behavior

Course Units: 1.0 Basic concepts of brain functioning as they relate to psychological phenomena. Including methodology, neuroanatomy, and neurotransmission, important for understanding the mediation of behavior. **Cross-Listed:** PSY 210 **Prerequisite(s):** PSY 100 or BIO 103 and BIO 104 . **CC:** SET

BIO 211 - Brain and Behavior

Course Units: 1.0 This seminar will provide students with an opportunity to examine how brain processes impact behavior and psychological functioning. Students will gain experience giving oral presentations and critically evaluating empirical studies pertaining to both normal and abnormal behavior. **Cross-Listed:** PSY 410 **Prerequisite(s):** PSY 210 or BIO 210 and PSY 300 **CC:** WAC

BIO 225 - Molecular Biology of the Cell

Course Units: 1.0 **(TBD: Staff)** Major topics include the nature, organization, and functions of the genetic material, DNA replication, gene expression, protein synthesis, the relationships between important macromolecular constituents within the cell, regulation of the cell cycle and cell proliferation, cell signaling, and foundations of cell differentiation and development. **Prerequisite(s):** BIO 103 and BIO 104 or permission of instructor. **Corequisite(s):** BIO 225L **Prereq/Corequisite(s):** CHM 101 is strongly recommended prior to taking this course. (will be phased out in 2018-19) **Lecture/Lab Hours** One lab per week.

BIO 231 - Cell-Tissue-Material Interaction

Course Units: 1.0 This course studies interactions between living cells, tissues and implant biomaterials, with a focus on molecular and cellular level phenomena in the initiation and generation of tissue and systemic responses. **Cross-Listed:** BME 331 **CC:** SET

BIO 235 - Global Biogeochemical Cycles

Course Units: 1.0 Biology, geology and chemistry are intricately linked to form the world around us. Biogeochemical cycles set the stage for life on Earth. This course explores the carbon, nitrogen, water, phosphorus, and sulfur cycles at the surface of the Earth. We investigate how biological (e.g., primary production, respiration), anthropogenic (e.g., urbanization, pollution) and geological processes (e.g., tectonics, rock weathering) influence these chemical cycles and in turn how these cycles influence the climate and the oceans. Field studies focus on tropical marine biogeochemistry of coral reefs, mangrove forests, seagrass meadows, lagoons and estuaries. Course includes a required week-long field trip to a remote field station in Panama. There are additional costs associated with field trip expenses. All students must meet basic term abroad requirements and submit an application. This course is open to all students, but preference will be given to those with a declared major in geosciences, environmental science, chemistry or biology. **Cross-Listed:** GEO 305 **Corequisite(s):** BIO 305L **CC:** SCLB, WAC, WAC-R **ISP:** ENS

BIO 242 - Neurobiology

Course Units: 1.0 This course focuses on fundamental concepts of neurobiology using studies from invertebrate and/or vertebrate model systems. Topics covered will include neural development, synaptic connectivity, neural plasticity, neuronal cell properties, sensory systems, and control of movement. **Cross-Listed:** PSY 212 **Prerequisite(s):** BIO 103 and BIO 104 **CC:** SET

BIO 243 - Bioinformatics: Information Technology in the Life Sciences

Course Units: 1.0 The disciplines of biology and information technology are intersecting with increasing frequency, most notably in the emerging field of bioinformatics. Bioinformatics has been fueled by the advent of large-scale genome sequencing projects, which has generated enormous sets of "mineable" data representing an invaluable resource for biologists. Biology and computer science students in the course will gain a working knowledge of the basic principles of the others' discipline and will then collaborate together in class on bioinformatics projects. Topics include pairwise and multiple sequence alignments, phylogenetic trees, gene expression analysis, and personalized medicine. **Cross-Listed:** CSC 243 **Prerequisite(s):** BIO 205 or a C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , or CSC 108 **CC:** SET **ISP:** STS

BIO 291 - Biology Research Practicum 1

Course Units: 0.0 The Biology Research Practicum is designed to allow students to engage in research in the biological sciences early in their undergraduate careers. Students will work under the direction of a member of the biology faculty, often collaborating with seniors who are completing their research. Expectations include a minimum of four hours per week of lab work and attendance at Biology Department seminars and/or weekly lab meetings. This course requires advance permission of the individual research advisor, who may have additional requirements. To receive Pass/Fail credit equivalent to one course, the student must earn three terms of passing grades for the practicum experience. **Prereq/Corequisite(s):** Not open to students currently enrolled in a sophomore scholars projects in the Biology Department or in BIO 490 , BIO 491 , BIO 492 , BIO 493 , BIO 494 , BIO 495 , BIO 496 , BIO 497 , BIO 498 , or BIO 499 . Does not count as a major elective.

BIO 292 - Biology Research Practicum 2

Course Units: 0.0 The Biology Research Practicum is designed to allow students to engage in research in the biological sciences early in their undergraduate careers. Students will work under the direction of a member of the biology faculty, often collaborating with seniors who are completing their research. Expectations include a minimum of four hours per week of lab work and attendance at Biology Department seminars and/or weekly lab meetings. This course requires advance permission of the individual research advisor, who may have additional requirements. To receive Pass/Fail credit equivalent to one course, the student must earn three terms of passing grades for the practicum experience. **Prereq/Corequisite(s):** Not open to students currently enrolled in a sophomore scholars projects in the Biology Department or in BIO 490 , BIO 491 , BIO 492 , BIO 493 , BIO 494 , BIO 495 , BIO 496 , BIO 497 , BIO 498 , or BIO 499 . Does not count as a major elective.

BIO 293 - Biology Research Practicum 3

Course Units: 1.0 The Biology Research Practicum is designed to allow students to engage in research in the biological sciences early in their undergraduate careers. Students will work under the direction of a member of the biology faculty, often collaborating with seniors who are completing their research. Expectations include a minimum of four hours per week of lab work and attendance at Biology Department seminars and/or weekly lab meetings. This course requires advance permission of the individual research advisor, who may have additional requirements. To receive Pass/Fail credit equivalent to one course, the student must earn three terms of passing grades for the practicum experience. **Prereq/Corequisite(s):** Not open to students currently enrolled in a sophomore scholars projects in the Biology Department or in BIO 490 , BIO 491 , BIO 492 , BIO 493 , BIO 494 , BIO 495 , BIO 496 , BIO 497 , BIO 498 , or BIO 499 . Does not count as a major elective.

BIO 295H - Biology Honors Independent Project 1

Course Units: 0.0 Two-term sophomore independent study project on a biological topic, under the direction of a biology faculty member. Open to students in the Union Scholars Program. Students receive a Pass/Fail grade for the first term and a letter grade and one course credit upon completion of the second term of the project. **Prerequisite(s):** Requirements are arranged with the faculty mentor. **Note:** Does not count as a major elective.

BIO 296H - Biology Honors Independent Project 2

Course Units: 1.0 Two-term sophomore independent study project on a biological topic, under the direction of a biology faculty member. Open to students in the Union Scholars Program. Students receive a Pass/Fail grade for the first term and a letter grade and one course credit upon completion of the second term of the project. **Prerequisite(s):** Requirements are arranged with the faculty mentor. **Note:** Does not count as a major elective.

BIO 314 - Ornithology w/lab

Course Units: 1.0 Birds are excellent subjects to study all levels of biological organization, from biochemistry and genetics through physiology, ecology, and evolution. This course emphasizes the evolution, anatomy, physiology, ecology, and conservation biology of avifauna. Weekly labs will be split between the field to identify birds through sight and sound and the laboratory to learn dissections and study skins. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 314L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 315 - Biology of Plants w/lab

Course Units: 1.0 Students will learn about the major characteristics and innovations of land plants and evaluate the functional and adaptive significance of variants in their form, physiology and life history. **Prerequisite(s):** BIO 103 and BIO 104 or permission of the instructor. **Corequisite(s):** BIO 315L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 317 - Entomology w/lab

Course Units: 1.0 Entomology examines the evolution and diversity of the most important and successful animal group, the insects. This course explores all aspects of insect biology (ecology, evolution, anatomy, physiology, behavior, neurobiology, and endocrinology). **Prerequisite(s):** BIO 103 and BIO 104 **Corequisite(s):** BIO 317L **Prereq/Corequisite(s):** Students will be expected to attend one laboratory per week and mandatory field trips for collecting insects in diverse habitats. **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 319 - Vertebrate Natural History w/lab

Course Units: 1.0 This course explores the biology of vertebrate animals with emphasis on understanding the diversity, life history, taxonomy, and unique adaptations of local vertebrate species (exclusive of fish). The laboratory focuses on developing scientifically sound skills in observation and identification of amphibians, reptiles, mammals, and birds. There will be frequent field trips to observe vertebrates in their natural habitats. Additional meetings will be required for regional field excursions, and for morning bird watching. Students must be available for one evening and one morning field trip. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 319L **CC:** SCLB **ISP:** ENS

BIO 320 - Ecology w/lab

Course Units: 1.0 Organisms and their environment, population and community ecology, and the structure and integration of ecosystems will be discussed along with a focus on animal community ecology. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 320L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS **Note:** There may be field trips requiring scheduling outside of normal class time.

BIO 322 - Conservation Biology w/lab

Course Units: 1.0 Natural ecosystems have suffered from declining biodiversity and encroaching human development. In this course, you will examine how these alterations impact populations and ecosystems and will evaluate management strategies designed to facilitate long-term sustainability. Topics include genetics and population biology of rare species, threats to biodiversity and adaptive ecosystems management. **Prerequisite(s):** BIO 103 and BIO 104 or permission of instructor. **Corequisite(s):** BIO 322L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 324 - Plant Ecology w/lab

Course Units: 1.0 Examines the factors that affect the distribution and abundance of plants including the availability of water or nutrients, interactions with neighboring plants or animals, and the frequency of disturbances such as fires. Topics also include such environmental issues as climate change, exotic species invasions, the conservation of rare species, and the benefits of urban nature for human health. The weekly lab includes field excursions and quantitative data analysis. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 324L **CC:** SCLB, WAC-R, GDQR, GNPS **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 325 - Animal Behavior w/lab

Course Units: 1.0 An introduction to the study of animal behavior. The mechanisms and evolutionary processes underlying animal behavior under natural conditions will be examined. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 325L **CC:** SET **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 328 - Evolutionary Med and Genetics

Course Units: 1 This course will discuss the role of evolutionary biology in modern medicine. Our goal will be to study how modern population genetics inform us about the evolution of infectious disease, human genetic disorders, cancer and aging, mental disorders, and ultimately the tradeoff between reproduction and death. We will discuss the genetic and evolutionary framework for these problems, understand their heritability, and study how the modern human environment has altered and shaped our evolution. **Prerequisite(s):** BIO 206

BIO 329 - Advanced Topics in Ecology

Course Units: 1.0 **(Not Offered this Academic Year)** An in-depth examination of current areas of research in ecology. Course assumes experience in a course with an ecological focus. **Prerequisite(s):** One of the following: BIO 315 , BIO 320 , BIO 322 , BIO 324 , or BIO 350T. **CC:** SET

BIO 330 - Comparative Animal Physiology w/lab

Course Units: 1.0 A study of internal physiological systems (e.g., respiration, circulation, and muscle systems). Physiological function in a wide variety of animal groups with a strong emphasis on the interaction of organisms with their environment. **Prerequisite(s):** BIO 205 and BIO 206 **Corequisite(s):** BIO 330L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 332 - Comparative Vertebrate Anatomy w/lab

Course Units: 1.0 Comparative analysis of vertebrate structure with emphasis on evolution and function. Laboratories examine vertebrate anatomy through dissections of four groups: mammals, fish, amphibians, and birds. **Prerequisite(s):** BIO 103 , BIO 104 and BIO 206 **Corequisite(s):** BIO 332L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 335 - Survey of Biochemistry

Course Units: 1.0 A survey of topics in biochemistry including buffers, protein structure, lipid structure, carbohydrate structure, enzyme mechanism, and enzyme kinetics. The pathways by which biomolecules are synthesized and degraded will be investigated. Specifically we will look at carbohydrate, lipid, and nitrogen metabolism. Medical applications will be emphasized throughout the course. **Cross-Listed:** CHM 335 and BCH 335 **Prerequisite(s):** BIO 205 and CHM 231 **Prereq/Corequisite(s):** Not open to students who have completed either BCH/BIO 380 or BCH/BIO/CHM 382 **CC:** SET

BIO 336 - Invertebrate Biology w/lab

Course Units: 1 Invertebrate biology includes the study of the different phyla of invertebrates; their anatomy, physiology, and evolutionary relationships. Invertebrate behavior and their interactions within different ecosystems will be examined. In the laboratory, students will study living and preserved invertebrates, as well as models and prepared microscope slides. Activities will include lab experiments, dissections, and other activities covering different invertebrate phyla. **Prerequisite(s):** BIO 103 and BIO 104 **Corequisite(s):** BIO 336L **CC:** SET **Note:** Not open to students who have completedeithe BCH/BIO 380 or BCH/BIO/CHM 382

BIO 345 - The Illustrated Organism

Course Units: 1.0 This studio course is the cross-section of common themes found in fine arts and biology, using art as a way of exploring science. The biological question of how evolution influences the relationship between structure and function will be addressed by exploring the use of color, light and structural logic with the goal of creating a world of your own. The course will culminate in an exhibition of artwork with corresponding texts by the student artists

describing the connection between the art and science. Taught jointly by biology and visual arts. Apply through participating departments. **Cross-Listed:** AVA 345 **CC:** HUM, SCLB

BIO 350 - Evolutionary Biology w/lab

Course Units: 1.0 Major concepts and mechanisms of biological evolution, including history of life, population genetics, molecular evolution, Darwinian medicine, and an emphasis on the processes of speciation. **Prerequisite(s):** BIO 103 and BIO 104 or permission of the instructor. **Corequisite(s):** BIO-350L **CC:** SET **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 350T - Terrestrial Ecology of Australia

Course Units: **CC:** SET **ISP:** ENS

BIO 352 - Microbiology w/lab

Course Units: 1.0 An overview of microbiology with emphasis on bacteria and viruses. Lectures will focus on the structural and functional characteristics of prokaryotes, the diversity, growth, and control of bacteria, and the structure and infectious cycle of DNA and RNA viruses, with special attention to those organisms that cause disease in humans. Particularly recommended for students planning careers in medicine and other health-related professions. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 352L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **Note:** Requires 2-3 hours of independent lab work per week.

BIO 352T - Marine Ecology of Australia

Course Units: 1 **CC:** SET **ISP:** ENS

BIO 354 - Developmental Biology w/lab

Course Units: 1.0 The study of the developing embryo is the science of the emergence of living order. With an emphasis on experimental design, we examine cell communication, cell fate, tissue patterning and morphogenesis, and gene expression and regulation explored within the context of experimental organisms. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 354L **CC:** SCLB, WAC, WAC-R **Lecture/Lab Hours** One lab per week.

BIO 355 - Immunology w/lab

Course Units: 1.0 The cellular and molecular basis of immunological specificity, regulatory and effector mechanisms of the mammalian immune response, and the importance of the innate immune system in the initiation and development of adaptive immunity. Laboratory exercises include basic techniques and concepts emphasizing morphological identification of leukocytes, anatomy of mouse lymphoid organs, phagocytosis and bactericidal components of innate immunity, agglutination, enzyme-linked immunosorbent assay (ELISA), analytical flow cytometry, and western blotting. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 355L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 358 - Advanced Cell Biology w/lab

Course Units: 1 In this course, students will delve deep into what makes the cell tick, eventually coming tounderstand and appreciate how all physiology & disease is indeed cell biology. In the laboratory section, students will learn how to form and test hypotheses, in addition to learning various key techniques such as mammalian cell culture, immunodetection, fluorescence microscopy, and quantitative gene expression. **Corequisite(s):** BIO 358L **Prereq/Corequisite(s):** BIO 205

BIO 362 - Experimental Neurobiology w/lab

Course Units: 1.0 This course provides an overview of biological function of animal nervous systems, with an emphasis on specific experimental methods and primary literature underlying this knowledge. Topics include ionic basis of actions potentials, electrophysiology, sensory and motor systems, brain-machine interfaces and the neural basis of animal behavior and navigation. Inquiry-based laboratory exercises include basic techniques in electrophysiology recording and stimulation, fine dissection, fluorescent labeling of neural cells, as well as data analysis, presentation and communication (writing intensive). **Cross-Listed:** PSY 312 **Prerequisite(s):** BIO 205 and either BIO 206 or BIO 242 . **Corequisite(s):** BIO 362L **CC:** SET **Lecture/Lab Hours** One lab per week.

BIO 363 - Cellular Neurosciences W/Lab

Course Units: 1 This is a discussion-based course that focuses on reading and presenting primary papers on the pathogenesis of neurological diseases and the latest advances in treatments including iPSCs, organoids, and AI interface. Woven into the discussion will be the social and ethical implication of using cutting-edge technology to combat these intractable diseases. Combined lecture and lab course meets twice/week for 3 hours; with additional laboratory time as needed **Prerequisite(s):** BIO 205 and either BIO 206 or BIO 242 **Corequisite(s):** BIO 363L **CC:** SCLB, WAC, WAC-R

BIO 364 - Epigenetics, Development, and Diseases

Course Units: 1.0 This course will focus on the epigenetic phenomena (e.g., RNA interference and genomic imprinting) on development, embryonic stem cells, animal cloning, and heritable human diseases. Epigenetic patterns are changes in gene expression that do not involve changes in DNA sequences. **Prerequisite(s):** BIO 205 or permission of the instructor. **CC:** SET

BIO 368 - Advanced Molecular Biology w/lab

Course Units: 1.0 Many of the advances made in medicine and molecular biology have been based on work done in microbial systems. This integrated laboratory course will focus on the discovery and characterization of antibiotic-producing soil microbes, using microbiological and molecular techniques. As part of the Tiny Earth collaboration, students will contribute their findings to a database shared by a network of student researchers from over 700 other institutions around the globe. In addition, we will explore gene expression and gene regulation of antibiotic production and resistance, and how bacterial systems have become advanced tools for the study of these processes. Combined lecture and lab course meets twice/week for 3 hours; Requires 2-3 hours of independent lab work per week. **Prerequisite(s):** BIO 205 and CHM 231 or permission of the instructor. **CC:** SCLB

BIO 370 - Endocrinology

Course Units: 1.0 Principles of endocrine and neuroendocrine regulation of physiological processes, concentrating on metabolism, growth, and reproduction. **Prerequisite(s):** BIO 205 **CC:** SET

BIO 375 - Exercise Physiology

Course Units: 1.0 This course examines how single and repeated bouts of exercise affect the structure and function of tissues, organs, and systems in humans and other animals. Studenta will be performing exercise activities in the lab portion of the course. **Prerequisite(s):** BIO 205 and BIO 206 **CC:** SET **Lecture/Lab Hours** One lab per week.

BIO 378 - Cancer Cell Biology

Course Units: 1.0 This course investigates the molecular basis of cancer by comparing normal cells to cancer cells with respect to growth control mechanisms, signal transduction, and cell-cell and cell-environment interactions. A large percent of the content of the course comes from recent research papers which students read and present to the class. Laboratory exercises include primary tissue culture, immunofluorescence microscopy, immunodetection, and a final research project. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 378L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 380 - Biochemistry: Nucleic Acids, Carbohydrates, and Lipids w/lab

Course Units: 1.0 An in-depth investigation into some of the macromolecules that are essential to life's processes. The course focuses on non-protein molecules and their unique chemical properties. **Cross-Listed:** BCH 380 **Prerequisite(s):** BIO 205 and CHM 232 , or permission of the instructor. CHM 232 , or permission of the instructor. **Corequisite(s):** BIO 380L **Prereq/Corequisite(s):** Not open to students who have completed BIO 335 . **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week.

BIO 382 - Biochemistry: Structure & Catalysis

Course Units: 1.0 **Cross-Listed:** CHM 382 and BCH 382 **Corequisite(s):** BIO 382L **CC:** SCLB, WAC, WAC-R

BIO 384 - Genetics and Molecular Biology w/lab

Course Units: 1.0 The use of both classical genetics and molecular biology as experimental tools is currently being applied to an extremely diverse array of questions in biology. This course will expose the student to many of the commonly-used techniques in the "toolkit" of the geneticist/molecular biologist. Emphasis will be on recent advances in our understanding of topics of current interest such as development, cellular response to environmental stimuli, tumor formation, human genetic disease, circadian rhythms, and mammalian sex determination, amongst others. Laboratory will emphasize the use of modern molecular biological techniques and will involve group projects of the students' choice. **Prerequisite(s):** BIO 205 and CHM 102 or CHM 110H **Corequisite(s):** BIO 384L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 487 - Senior Writing Seminar: Topics in Ecological and Evolutionary Biology

Course Units: 1.0 One of these three courses (BIO-487, 488 or 489) is required by, and limited to, seniors who are not satisfying their WS requirement through either an independent research project or thesis. Each seminar will provide a forum in which a biological topic of current interest and importance is explored in depth. Students will gain experience in giving oral presentations and critically evaluating the written work of both established scientists and fellow students. A paper is required to fulfill the WS requirement. Enrollment is optional for interdepartmental Biology/Other majors. **CC:** WS

BIO 488 - Senior Writing Seminar: Topics in Organismal and Physiological Biology

Course Units: 1.0 One of these three courses (BIO-487, 488, 489) is required by, and limited to, seniors who are not satisfying their WS requirement through either an independent research project or thesis. Each seminar will provide a forum in which a biological topic of current interest and importance is explored in depth. Students will gain experience in giving oral presentations and critically evaluating the written work of both established scientists and fellow students. A paper is required to fulfill the WS requirement. Enrollment is optional for interdepartmental Biology/Other majors. **Prereq/Corequisite(s):** BIO 206 or BIO 242 **CC:** WS

BIO 489 - Senior Writing Seminar: Topics in Cellular and Molecular Biology

Course Units: 1.0 One of these three courses (BIO-487, 488, 489) is required by, and limited to, seniors who are not satisfying their WS requirement through either an independent research project or thesis. Each seminar will provide a forum in which a biological topic of current interest and importance is explored in depth. Students will gain experience in giving oral presentations and critically evaluating the written work of both established scientists and fellow students. A paper is required to fulfill the WS requirement. Enrollment is optional for interdepartmental Biology/Other majors. **CC:** WS

BIO 490 - Biology Research 1

Course Units: 1.0 Independent research in consultation with a member of the biology staff. Research students are strongly encouraged to attend departmental seminars. **Prerequisite(s):** Permission of the chair and the instructor.

BIO 491 - Biology Research 2

Course Units: 1.0 Independent research in consultation with a member of the biology staff. Research students are strongly encouraged to attend departmental seminars. **Prerequisite(s):** Permission of the chair and the instructor.

BIO 492 - Biology Research 3

Course Units: 1.0 Independent research in consultation with a member of the biology staff. Research students are strongly encouraged to attend departmental seminars. **Prerequisite(s):** Permission of the chair and the instructor.

BIO 493 - Biology Research 4

Course Units: 1.0 Independent research in consultation with a member of the biology staff. Research students are strongly encouraged to attend departmental seminars. **Prerequisite(s):** Permission of the chair and the instructor.

BIO 494 - Biology Research 5

Course Units: 1.0 Independent research in consultation with a member of the biology staff. Research students are strongly encouraged to attend departmental seminars. **Prerequisite(s):** Permission of the chair and the instructor.

BIO 495 - Biology Research 6

Course Units: 1.0 Independent research in consultation with a member of the biology staff. Research students are strongly encouraged to attend departmental seminars. **Prerequisite(s):** Permission of the chair and the instructor. **CC:** WS

BIO 496 - Biology Research 7

Course Units: 1.0 Independent research in consultation with a member of the biology staff. Research students are strongly encouraged to attend departmental seminars. **Prerequisite(s):** Permission of the chair and the instructor.

BIO 497 - Biology Thesis Research 1

Course Units: 1.0 **(TBD: Staff)** A sequence that requires a thesis based on original scientific research. May be used to satisfy WS requirement and departmental component for honors in biology, or for WS requirement alone. Research students are strongly encouraged to attend departmental seminars. **Prerequisite(s):** Permission of the instructor. **CC:** WS

BIO 498 - Biology Thesis Research 2

Course Units: 1.0 A sequence that requires a thesis based on original scientific research. May be used to satisfy WS requirement and departmental component for honors in biology, or for WS requirement alone. Research students are strongly encouraged to attend departmental seminars. **Prerequisite(s):** Permission of the instructor. **CC:** WS

BIO 499 - Biology Thesis Research 3

Course Units: 1.0 A sequence that requires a thesis based on original scientific research. May be used to satisfy WS requirement and departmental component for honors in biology, or for WS requirement alone. Research students are strongly recommended to attend departmental seminars. **Prerequisite(s):** Permission of the instructor. **CC:** WS

Biomedical Engineering

BME 101 - Graphics and Image Processing for Biomedical Systems

Course Units: 1.0 Students will learn how to create objects, assemblies, and engineering drawings using SolidWorks, a solid modeling software. Students will also be introduced to the fundamentals of image acquisition and processing in biomedical systems and the use of block diagrams to construct more complex processing systems. **CC:** SET

BME 201 - Biomechanics 1

Course Units: 1.0 A basic biomechanics course concerned with two- and three-dimensional force systems, equilibrium and distributed forces. These topics will be studied in the context of the musculoskeletal system. **Prerequisite(s):** PHY 120

BME 202 - Biomechanics 2

Course Units: 1.0 Kinematics and kinetics of particles and rigid bodies in planar motion with applications to human motion analysis. The course includes Newtonian and energy approaches to problem solutions. **Prerequisite(s):** BME 201 **Corequisite(s):** BME 202L

BME 210 - Statistical Methods in Biomedical Engineering

Course Units: 1.0 This course will explore basic principles of probability and statistics, with emphasis on applications of statistical methods in Biomedical Engineering. Topics will include descriptive statistics, probability theory, discrete and continuous random variables, hypothesis testing and analysis of variance. **Prerequisite(s):** MTH 112 or MTH 113

BME 225 - Electric Circuits

Course Units: 1.0 Basic electrical circuit concepts and devices such as Ohm's law, Kirchhoff's laws, Thevenin and Norton equivalents, operational amplifiers, analysis methods, capacitors, inductors, ideal transformers, phasors, AC steady state analysis, complex power, frequency response and filters. **Cross-Listed:** ECE 225 **Prerequisite(s):** MTH 112 or higher. **Corequisite(s):** BME 225L **Lecture/Lab Hours** One lab per week.

BME 240 - Circuits and Systems

Course Units: 1.0 Transient analysis of RLC circuits; modeling of circuits using differential equations; system models and properties; Laplace transforms applied to circuit and system design and analysis; system functions; complex frequency; poles and zeros; stability; frequency response; filter design. **Cross-Listed:** ECE 240 **Prerequisite(s):** BME 225 or ECE 225 **Corequisite(s):** BME-240L **CC:** WAC **Lecture/Lab Hours** One lab per week.

BME 241 - Discrete Systems

Course Units: 1.0 Discrete signals and systems; classification and properties of systems; difference equations; Z-transform; Fourier series, Fourier transforms, the DFT and FFT; filters and filter design; A/D and D/A converters; applications to audio signal processing. **Cross-Listed:** ECE 241 **Prerequisite(s):** BME 240 **Corequisite(s):** BME 241L **CC:** WAC **Lecture/Lab Hours** One lab per week.

BME 281 - Biomedical Engineering Practicum 1

Course Units: 0.0 Under the supervision of a Biomedical Engineering faculty member, students may participate in undergraduate research or a design project. To receive pass/fail credit equivalent to one free elective course, a student must receive a passing grade in three terms of the practicum course. Up to two credits may be earned in this way. **Prerequisite(s):** Permission of the faculty supervisor.

BME 282 - Biomedical Engineering Practicum 2

Course Units: 0.0 Under the supervision of a Biomedical Engineering faculty member, students may participate in undergraduate research or a design project. To receive pass/fail credit equivalent to one free elective course, a student must receive a passing grade in three terms of the practicum course. Up to two credits may be earned in this way. **Prerequisite(s):** Permission of the faculty supervisor.

BME 283 - Biomedical Engineering Practicum 3

Course Units: 1.0 Under the supervision of a Biomedical Engineering faculty member, students may participate in undergraduate research or a design project. To receive pass/fail credit equivalent to one free elective course, a student must receive a passing grade in three terms of the practicum course. Up to two credits may be earned in this way. **Prerequisite(s):** Permission of the faculty supervisor.

BME 295H - Bioengineering Individual Project 1

Course Units: 1

BME 296H - Bioengineering Individual Project 2

Course Units: 1

BME 297H - Biomed Engineering Honors Individual Project

Course Units: 1

BME 311 - Advanced Biomechanics

Course Units: 1.0 Advanced biomechanics topics in stress analysis, deflection and stiffness, failure analysis, fracture mechanics, fatigue. **Prerequisite(s):** BME 201 **Corequisite(s):** BME 311L **Lecture/Lab Hours** One lab per week.

BME 331 - Cell-Tissue-Material Interaction

Course Units: 1.0 This course studies interactions between living cells, tissues and implant biomaterials, with a focus on molecular and cellular level phenomena in the initiation and generation of tissue and systemic responses. **Cross-Listed:** BIO 231 **Prerequisite(s):** BIO 104

BME 333 - Drug Delivery

Course Units: 1 Application of engineering design principles to problems in drug formulation and delivery. **Prerequisite(s):** BIO 104 , CHM 101 , CHM 110H or permission of instructor. **CC:** SET, WAC-R

BME 335 - Polymeric Biomaterials

Course Units: 1.0 This course focuses on the use of polymeric biomaterials for biomedical applications. Topics include, but are not limited to, basic polymer theory and characterization, the design and functionalization of novel polymers, processing techniques to fabricate polymeric biomaterials (e.g., meshes or hydrogels) with desired micro- and macroscopic properties, the interactions of human cells and tissues with these materials, and the use of synthetic polymers to control the delivery of therapeutic molecules and as scaffolding materials for regenerative medicine applications. The course will also include an ethics module to discuss topical regulatory and/or ethical issues related to the field (e.g., the use of human embryonic stem cells in combination with polymeric scaffolds for regenerative applications). **Prerequisite(s):** CHM 101

BME 336 - Biological Transport

Course Units: 1.0 Basic principles of mass, heat and fluid transport, including derivation of basic equations and simplification techniques. Applications to physiological systems, pharmacokinetics and artificial organs. **Prerequisite(s):** CHM 101

BME 338 - Mechanobiology

Course Units: 1.0 This course will focus on the mechanical regulation of biological systems. The topics covered include principles and concepts of mechanobiology; embryogenesis and histogenesis of tissues with a focus on the skeletal system; physical forces at the cellular, tissue, and organ level; mechanical regulation of cellular behavior, tissue growth and organ development. **Prerequisite(s):** BME 201 or equivalent. **Prereq/Corequisite(s):** Course is only open to BME majors.

BME 345 - Orthopaedic Biomechanics

Course Units: 1.0 This course will examine issues in the field of Orthopaedic Biomechanics. We will explore the current state of knee, dental, spinal, and other orthopaedic implants. We will also look at treatments available for fracture healing. **Prerequisite(s):** BME 202 or equivalent.

BME 386 - Biomedical Instrumentation

Course Units: 1.0 Introduction to the theory and application of instruments in medicine. Measurements of the major systems in the body are covered. A weekly laboratory provides an opportunity to perform measurements and use biomedical instruments. **Cross-Listed:** ECE 386 **Prerequisite(s):** BME 240 , ECE 240 **Corequisite(s):** BME 386L **Lecture/Lab Hours** One lab per week.

BME 487 - Medical Imaging Systems

Course Units: 1.0 The basic physics, instrumentation, system design, and image reconstruction algorithms are covered for the following imaging modalities: ultrasound, radiography, x-ray computed tomography (CT), magnetic resonance imaging (MRI), planar scintigraphy, and positron emission tomography (PET). **Cross-Listed:** ECE 487 **Prerequisite(s):** BME 241 , ECE 241

BME 490 - Biomedical Engineering Independent Study 1

Course Units: 0.0

BME 491 - Biomedical Engineering Independent Study 2

Course Units: 0.0

BME 492 - Biomedical Engineering Independent Study 3

Course Units: 0.0

BME 495 - Biomedical Engineering Capstone Design 1

Course Units: 1.0 A capstone design experience in which students work in teams on biomedical Engineering design problems. Each team will use design methodologies and techniques to produce a complete and detailed design for a designated biomedical Engineering client. **Prerequisite(s):** ECE 240 **Corequisite(s):** BME 311 **CC:** WAC, WAC-R

BME 496 - Biomedical Engineering Capstone Design 2

Course Units: 1.0 A continuation of the capstone design experience in which students work in teams where they apply design methodologies and techniques to produce a complete and detailed design for a designated biomedical engineering client. **Prerequisite(s):** BME 495 **CC:** WS

BME 497 - Biomedical Engineering Senior Project 1

Course Units: 1.0 Research or design project, performed either independently or as a team, under the supervision of one or more faculty participating in the Biomedical Engineering program.

BME 498 - Biomedical Engineering Senior Project 2

Course Units: 1.0 Continuation of the capstone research or design project, performed either independently or as a team, under the supervision of one or more faculty participating in the Biomedical Engineering program. **Prerequisite(s):** BME 497 **CC:** WAC

Chemistry

CHM 060 - Meals to Molecules

Course Units: 1.0 What is a healthy diet? This course will discuss human nutrition from a molecular perspective. Readings from the textbook and laboratory exercises will familiarize the student with the components of foods and how

these components are used by the human body. In addition, the course will examine the benefits and pitfalls of supplementation of the diet with vitamins, etc., and discuss how to interpret health claims. **Corequisite(s):** CHM 060L **Prereq/Corequisite(s):** Not open to students who have completed CHM 101 or CHM 110H , or have AP credit in chemistry. **CC:** SCLB **ISP:** STS

CHM 080 - Culinary Chemistry

Course Units: 1.0 This culinary-themed course is an introduction to the chemistry involved in food preparation and cooking. The course will include lecture and a laboratory experience with inquiry-based exercises in both the traditional chemical laboratory setting and a typical kitchen setting. Topics include the chemical make-up of the food we eat, the relationship between structure and flavor, and how chefs exert exquisite control over chemical reactions to create the flavor and texture of a gourmet meal. **Prereq/Corequisite(s):** Not open to students who have completed CHM 101 or CHM 110H , or have AP credit in chemistry. **CC:** SCLB **ISP:** STS

CHM 090 - The Art & Science of Painting

Course Units: 1.0 A historical and chemical grounding in the topic of painting and its impact on society, with focus on the 14th to 17th centuries. Topics include inorganic and organic pigments and binders used in the late medieval workshop, fresco, the tempera tradition, and oil painting in the Renaissance (properties of oil, mixing with pigments, glazing, drying). Students will work with primary sources and the secondary literature, and engage in laboratory experimentation. **Cross-Listed:** AAH 205 **CC:** SET, HUM **ISP:** STS

CHM 101 - Introductory Chemistry 1

Course Units: 1.0 This is an introductory course that focuses on atomic and molecular structure, chemical bonding, stoichiometry, aqueous chemical reactions, and the properties of gases, liquids, solids and solutions. **Prerequisite(s):** Not open to students who have scored 4 or 5 on the AP Chemistry Exam or who have completed CHM 110H . All students who wish to enroll in an introductory chemistry course must take a placement examination to determine the appropriate course. See Course Selection Guidelines for more information on placement. **Corequisite(s):** CHM 101L **CC:** SCLB **Lecture/Lab Hours** Three lab hours/week,6/10 weeks. **ISP:** ENS

CHM 102 - Introductory Chemistry 2

Course Units: 1.0 A continuation of CHM 101 , focusing on thermodynamics, chemical kinetics, chemical equilibrium, acids and bases, electrochemistry, and an introduction to organic chemistry. **Prerequisite(s):** CHM 101 or placement via the placement exam. **Corequisite(s):** CHM 102L **Prereq/Corequisite(s):** Not open to students who have taken CHM 110H . **CC:** SCLB, GNPS **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

CHM 110H - Honors Introductory Chemistry

Course Units: 1.0 A laboratory-intensive course that covers the main topics of CHM 101 and CHM 102 and is meant to replace those courses for students who have strong backgrounds in introductory chemistry. **Prerequisite(s):** Students who have scored 4 or 5 on the AP chemistry exam will be automatically placed into CHM 110H; see Course Selection guidelines for more information on placement. **CC:** SCLB, GNPS **ISP:** ENS **Note:** Students who have scored 4 or 5 on the AP chemistry exam or who successfully complete CHM 110H will also receive AP credit for CHM 101 .

CHM 224 - Frontiers of Nanotechnology and Nanomaterials

Course Units: 1.0 An overview of nanotechnology and nanomaterials including interdisciplinary perspectives from engineering, materials science, chemistry, physics, and biology with an emphasis on how applications (sensors, energy materials, nanocomposites, and biomaterials) can be used to solve global challenges. **Cross-Listed:** ESC

224 **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121;MTH 112 ; and CHM 101 or CHM 110H ; or permission of instructor. **CC:** SET, GETS

CHM 231 - Organic Chemistry 1

Course Units: 1.0 A mechanistic approach to the chemistry of carbon compounds organized around the reactions of functional groups. We cover alkanes, cycloalkanes, alcohols, alkyl halides (nucleophilic substitution and elimination), alkenes (addition and elimination), alkynes, spectroscopy (IR and NMR) and computer molecular modeling. **Prerequisite(s):** CHM 102 or CHM 110H **Corequisite(s):** CHM 231L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

CHM 232 - Organic Chemistry 2

Course Units: 1.0 A continuation of CHM 231 including an emphasis on synthesis, and the chemistry of conjugated and aromatic compounds, carbonyl compounds, and an introduction to important classes of biomolecules. **Prerequisite(s):** CHM 231 **Corequisite(s):** CHM 232L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week.

CHM 240 - Analytical Chemistry

Course Units: 1.0 A course that focuses on the quantitative analysis of samples. Classroom and laboratory emphasis on statistical treatment of data, classical and instrumental methods of chemical analysis, and chemical equilibrium. **Prerequisite(s):** CHM 231 **Corequisite(s):** CHM 240L **CC:** SCLB, WAC-R **Lecture/Lab Hours** Six lab hours each week. **ISP:** ENS

CHM 245 - Environmental Chemistry

Course Units: 1.0 A course focused on the role of chemical principles such as chemical equilibrium, kinetics and chemical structure in understanding natural environmental cycles and the impacts of human activity on those cycles. Topics covered include: aquatic chemistry and water pollution, atmospheric chemistry and air pollution, energy and climate change, and toxic organic chemicals in the environment. **Prerequisite(s):** CHM 231 **CC:** SET **ISP:** ENS

CHM 260 - Inorganic Chemistry

Course Units: 1.0 Foundations of inorganic chemistry focuses on bonding, acid/base properties, structure and symmetry, and reactivity of transition metal compounds. The laboratory portion of the course is centered on the synthesis and characterization of inorganic compounds and investigation of their electronic properties. **Prerequisite(s):** CHM 231 or permission of the instructor. **Corequisite(s):** CHM 260L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week.

CHM 291 - Chemistry Research Practicum 1

Course Units: 0.0 This course is designed for students who want to gain research experience in chemistry or biochemistry under the direction of a member of the chemistry faculty. Expectations include a minimum of four hours per week of lab work, in addition to other requirements to be determined by individual research advisors. To receive Pass/Fail credit equivalent to one course, the student must earn 3 terms (normally in a row) of passing grades for the practicum experience. **Prereq/Corequisite(s):** Not open to students currently enrolled in CHM 295H , CHM 296H , CHM 491 , CHM 492 , CHM 493 or in a sophomore scholar's project in the Chemistry Department. **Note:** Does not count as chemisty major elective, and does not count toward a chemistry minor.

CHM 292 - Chemistry Research Practicum 2

Course Units: 0.0 This course is designed for students who want to gain research experience in chemistry or biochemistry under the direction of a member of the chemistry faculty. Expectations include a minimum of four hours per week of lab work, in addition to other requirements to be determined by individual research advisors. To receive Pass/Fail credit equivalent to one course, the student must earn 3 terms (normally in a row) of passing grades for the practicum experience. **Prereq/Corequisite(s):** Not open to students currently enrolled in CHM 295H , CHM 296H , CHM 491 , CHM 492 , CHM 493 or in a sophomore scholar's project in the Chemistry Department. **Note:** Does not count as a chemistry major elective, and does not cuont toward a chemistry minor.

CHM 293 - Chemistry Research Practicum 3

Course Units: 0.0 This course is designed for students who want to gain research experience in chemistry or biochemistry under the direction of a member of the chemistry faculty. Expectations include a minimum of four hours per week of lab work, in addition to other requirements to be determined by individual research advisors. To receive Pass/Fail credit equivalent to one course, the student must earn 3 terms (normally in a row) of passing grades for the practicum experience. **Prereq/Corequisite(s):** Not open to students currently enrolled inCHM CHM 295H , CHM 296H ,CHM 491 , CHM 492 , CHM 493 or in a sophomore scholar's project in the Chemistry Department. **Note:** Does not count as a chemistry major elective, and does not ount toward a chemistry minor.

CHM 295H - Chemistry Honors Independent Project 1

Course Units: 0.0 Two-term sophomore independent study project on a chemistry- or biochemistry-related project under the direction of a member of the chemistry faculty, for students in the Union Scholars Program. Expectations include a minimum of six hours per week of lab work, in addition to other requirements to be determined by individual research advisors. Student receives a Pass/Fail grade in the first term of the project, and a letter grade and one course credit upon completion of the second term of the project. **Prereq/Corequisite(s):** Not open to students currently enrolled in CHM 491 , CHM 492 , or CHM 493 **Note:** Does not count as a chemistry major elective, and does not count toward a chemistry minor.

CHM 296H - Chemistry Honors Independent Project 2

Course Units: 1.0 Two-term sophomore independent study project on a chemistry- or biochemistry-related project under the direction of a member of the chemistry faculty, for students in the Union Scholars Program. Expectations include a minimum of six hours per week of lab work, in addition to other requirements to be determined by individual research advisors. Student receives a Pass/Fail grade in the first term of the project, and a letter grade and one course credit upon completion of the second term of the project. **Prereq/Corequisite(s):** Not open to students currently enrolled in CHM 491 , CHM 492 , or CHM 493 **Note:** Does not count as a chemistry major elective, and does not count toward a chemistry minor.

CHM 297 - Chemistry Research Practicum 4

Course Units: 0 A second practicum research sequence under the direction of a member of the chemistry faculty. Expectations include a minimum of four hours per week of lab work, in addition to other requirements to be determined by individual research advisors. To receive Pass/Fail credit equivalent to one course, the student must earn 3 terms (normally in a row) of passing grades for the practicum experience. **Prerequisite(s):** CHM 291 , CHM 292 , CHM 293 . Not open to students currently enrolled in CHM 291 , CHM 292 , CHM 293 , CHM 295H , CHM 296H , CHM 491 , CHM 492 , or CHM 493 . **Note:** Does not count as a chemistry major elective, and does not count toward a chemistry minor.

CHM 298 - Chemistry Research Practicum 5

Course Units: 0 A second practicum research sequence under the direction of a member of the chemistry faculty. Expectations include a minimum of four hours per week of lab work, in addition to other requirements to be determined by individual research advisors. To receive Pass/Fail credit equivalent to one course, the student must earn 3 terms (normally in a row) of passing grades for the practicum experience. **Prerequisite(s):** CHM 291 , CHM 292 , and CHM 293 . Not open to students currently enrolled in CHM 291 , CHM 292 , CHM 293 , CHM 295H , CHM 296H , CHM 491 , CHM 492 , or CHM 493 . **Note:** Does not count as chemistry major elective, and does not count toward a chemistry minor.

CHM 299 - Chemistry Research Practicum 6

Course Units: 0 A second practicum research sequence under the direction of a member of the chemistry faculty. Expectations include a minimum of four hours per week of lab work, in addition to other requirements to be determined by individual research advisors. To receive Pass/Fail credit equivalent to one course, the student must earn 3 terms (normally in a row) of passing grades for the practicum experience. **Prerequisite(s):** CHM 291 , CHM 292 , and CHM 293 . Not open to students currently enrolled in CHM 291 , CHM 292 , CHM 293 , CHM 295H , CHM 296H , CHM 491 , CHM 492 , or CHM 493 . **Note:** Does not count as a chemistry major elective, and does not count toward a chemistry minor.

CHM 330 - Medicinal Chemistry

Course Units: 1.0 This course focuses on medicinal chemistry and the underlying principles of organic chemistry. Topics to be covered include drug discovery and approval, lead modification, drug-receptor interactions, structure-activity relationships (SAR), drug delivery, pro-drugs and biomimetics. Physicochemical properties and synthetic approaches to drug families will be emphasized. **Prerequisite(s):** CHM 232 **CC:** SET

CHM 332 - Synthetic Methods

Course Units: 1.0 This course focuses on developing the common laboratory techniques used in modern synthetic organic chemistry and the underlying principles of organic chemistry covered. Topics to be covered will be in the form of three synthetic projects. **Prerequisite(s):** CHM 232 **CC:** SCLB **Lecture/Lab Hours** Six lab hours each week plus additional instrumentation time outside of lab.

CHM 335 - Survey of Biochemistry

Course Units: 1.0 A survey of topics in biochemistry including buffers, protein structure, lipid structure, carbohydrate structure, enzyme mechanism, and enzyme kinetics. The pathways by which biomolecules are synthesized and degraded will be investigated. Specifically we will look at carbohydrate, lipid, and nitrogen metabolism. Medical applications will be emphasized throughout the course. **Cross-Listed:** BIO 335 and BCH 335 **Prerequisite(s):** BIO 205 or BIO 225 , CHM 231 **CC:** SET

CHM 340 - Chemical Instrumentation

Course Units: 1.0 Theory and practice of modern methods of analysis with emphasis on spectroscopic, chromatographic, electrochemical, and surface science techniques, as well as electronic measurements. **Prerequisite(s):** CHM 231 , CHM 240 , and one course in physics or permission of the instructor. **Corequisite(s):** CHM 340L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

CHM 351 - Kinetics and Thermodynamics

Course Units: 1.0 Properties of gases; fundamentals of statistical mechanics; fundamentals of thermodynamics including heats of reactions, phase transitions, and chemical equilibria; chemical kinetics. **Prerequisite(s):** CHM 240 ,

PHY 110 or PHY 120 and MTH 115 or MTH 115H **Corequisite(s):** CHM 351L **CC:** SCLB, WAC **Lecture/Lab Hours** Four lab hours each week.

CHM 352 - Quantum Chemistry

Course Units: 1.0 Fundamentals of quantum mechanics and its application to chemical bonding and spectroscopy. **Prerequisite(s):** CHM 240 , and MTH 115 or MTH 115H ; PHY 111 or PHY 121 or IMP 121 **Corequisite(s):** CHM 352L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week.

CHM 354 - Chemical Applications of Group Theory

Course Units: 1.0 A course on the role of molecular symmetry in chemistry. Topics include symmetry point groups; bonding in organic, inorganic, and organometallic compounds; and vibrational spectroscopy. **Prerequisite(s):** CHM 232 and CHM 352 , MTH 115 , and PHY 111 or PHY 121 **Prereq/Corequisite(s):** CHM 352 may be taken concurrently. **CC:** SET

CHM 360 - Advanced Inorganic Chemistry

Course Units: 1.0 This course focuses on advanced topics in inorganic chemistry, including: Spectroscopic methods, homogeneous and heterogeneous catalysis, organometallics, materials chemistry, inorganic nanomaterials, and bioinorganic chemistry. **Prerequisite(s):** CHM 260 and CHM 351 or permission of the instructor. **CC:** SET

CHM 382 - Biochemistry: Structure and Catalysis

Course Units: 1.0 Structure and function of proteins/enzymes including purification, mechanism, kinetics, regulation, metabolism and a detailed analysis of several classic protein systems. **Cross-Listed:** BCH 382 and BIO 382 **Prerequisite(s):** CHM 232 Not open to students who have completed CHM 335 , BIO 335 or BCH 335 **Corequisite(s):** CHM 382L **CC:** SCLB, WAC, WAC-R **Lecture/Lab Hours** Four lab hours each week.

CHM 491 - Chemical Research 1

Course Units: 1.0 Chemical research under the direction of a member of the faculty. Thesis required. Expectations include a minimum of twelve hours per week of lab work, in addition to other requirements to be determined by individual research advisors. **Prerequisite(s):** CHM 232 , CHM 240 (CHM 340 and CHM 351 are recommended), third-term junior standing, and/or permission of the Chemistry Department Chair. **CC:** WS

CHM 492 - Chemical Research 2

Course Units: 1.0 Chemical research under the direction of a member of the faculty. Thesis required. Expectations include a minimum of twelve hours per week of lab work, in addition to other requirements to be determined by individual research advisors. **Prerequisite(s):** CHM 232 , CHM 240 (CHM 340 and CHM 351 are recommended), third-term junior standing, and/or permission of the Chemistry Department Chair. **CC:** WS

CHM 493 - Chemical Research 3

Course Units: 1.0 Chemical research under the direction of a member of the faculty. Thesis required. Expectations include a minimum of twelve hours per week of lab work, in addition to other requirements to be determined by individual research advisors. **Prerequisite(s):** CHM 232 , CHM 240 (CHM 340 and CHM 351 are recommended), third-term junior standing, and/or permission of the Chemistry Department Chair. **CC:** WS

Chinese

CHN 100 - Basic Chinese 1

Course Units: 1.0 Basic skills for students who begin with no knowledge of Mandarin or 1-3 years of high school instruction. **CC:** HUM, JCHF, JWOL **ISP:** AIS

CHN 101 - Basic Chinese 2

Course Units: 1.0 A continuation of CHN 100 . **Prerequisite(s):** CHN 100 or permission of instructor. **CC:** LCCC, HUM, JCHF, JWOL **ISP:** AIS

CHN 101T - Basic Chinese 2

Course Units: 1 Study Abroad Chinese Course **CC:** LCC **ISP:** AIS

CHN 102 - Basic Chinese 3

Course Units: 1.0 A continuation of CHN 101 . **Prerequisite(s):** CHN 101 or permission of instructor. **CC:** LCCC, HUM, JCHF, JWOL **ISP:** AIS

CHN 102T - Basic Chinese 3

Course Units: Study Abroad Chinese Course **CC:** LCC **ISP:** AIS

CHN 103 - Chinese for the Term Abroad

Course Units: 1.0 An introduction to Chinese language, combining Basic Chinese I and culture components. Open to students going on the term abroad or those with general interest in learning Chinese. Students who took CHN 100 / CHN 102 sequence cannot take this course. **CC:** LCCC **ISP:** AIS

CHN 200 - Intermediate Chinese 1

Course Units: 1.0 Needs to complete CHN 102 at Union or be able to speak and write at the paragraph level on practices or memorized topics; contact any Chinese professor for permission is you have experience in the language. **CC:** LCCC, HUM, JCHF, JWOL **ISP:** AIS

CHN 201 - Intermediate Chinese 2

Course Units: 1.0 Continuation of CHN 200 **Prerequisite(s):** CHN 200 or permission of instructor. **CC:** LCCC, HUM, JCHF, JWOL **ISP:** AIS

CHN 202 - Intermediate Chinese 3

Course Units: 1.0 Continuation of CHN 201 **Prerequisite(s):** CHN 201 or permission of instructor. **CC:** LCCC, HUM **ISP:** AIS

CHN 204T - Chinese Language Studied Abroad

Course Units: 1.0 See International Programs. **CC:** LCCC **ISP:** AIS **Note:** Fall term in China.

CHN 205T - Chinese Language Studied Abroad

Course Units: 1.0 See International Programs. **CC:** LCCC **ISP:** AIS **Note:** Fall term in China.

CHN 206T - Chinese Studies Abroad 3

Course Units: Chinese Studied Abroad 3 **CC:** LCCC **ISP:** AIS

CHN 250T - Chinese Language Studied Independently Abroad 1

Course Units: 1.0 **CC:** LCCC **ISP:** AIS

CHN 251T - Chinese Language Studied Independently Abroad 2

Course Units: 1.0 **CC:** LCCC **ISP:** AIS

CHN 295H - Chinese Honors Independent Project 1

Course Units: 0.0

CHN 296H - Chinese Honors Independent Project 2

Course Units: 1.0 **CC:** HUM

CHN 300 - Advanced Intermediate Chinese 1

Course Units: 1.0 Needs to complete CHN 202 at Union or be ale to speak and write at the paragraph level on familiar and unfamiliar concrete topics; contact any Chinese professor for permission if you have experience in the language. **Prerequisite(s):** CHN 202 or equivalent. **CC:** LCCC, HUM, JCHF, JWOL, WAC **ISP:** AIS

CHN 301 - Advanced Intermediate Chinese 2

Course Units: 1.0 A continuation of CHN 300 **Prerequisite(s):** CHN 300 or permission of instructor. **CC:** LCCC, HUM, WAC **ISP:** AIS

CHN 302 - Advanced Intermediate Chinese 3

Course Units: 1.0 A continuation of CHN 301 **Prerequisite(s):** CHN 301 or permission of instructor. **CC:** LCCC, HUM **ISP:** AIS

CHN 320T - Chinese Civilization

Course Units: 1.0 **CC:** LCCC **ISP:** AIS

CHN 400 - The Changing Face of China

Course Units: 1.0 This course is designed for students who have completed three years of Chinese at the college level or the equivalent. More advanced authentic texts of diverse topics will be introduced to students that cover the sociopolitical, economic, and cultural dimensions of a drastically changing China sitting in the whirlwind of commercialization and globalization. Students will gain insight into contemporary China and develop a higher level of Chinese proficiency through class discussions, written compositions, TV news clips and film analyses. Class will be conducted entirely in Chinese. **Prerequisite(s):** CHN 302 or equivalent. Enrollment with the consent of the instructor. **CC:** LCCC, HUM, GCHF, GWOL, WAC **ISP:** AIS

CHN 401 - Media China

Course Units: 1.0 The course is designed for students who have completed three years of Chinese at the college level or the equivalent. Through analysis of more advanced and up-to-date authentic materials from China's mass media, students will not only develop a higher level of Chinese proficiency through class discussions, written compositions, research presentations, but also gain insight into contemporary China, as well as develop strong media literacy skills. Class will be conducted entirely in Chinese. **Prerequisite(s):** CHN 302 or equivalent. Enrollment with consent of the instructor. **CC:** LCCC, HUM, WAC **ISP:** AIS

CHN 402 - Chinese Thought in the 20th Century

Course Units: 1.0

The course is an advanced level language course that develops students' understanding and appreciation of China's century of reform through short fiction and literary essays. The readings focus on the role of women, the disparity between the rich and poor, urbanite and peasant, the role of the citizen to the state, and individual responses to great political and economic changes. The purpose of the course is to strengthen students' linguistic ability while at the same time deepen their cultural knowledge of China. Students will be able to read with the assistance of a dictionary. They will develop skills to speak on abstract topics and write critical and nuanced essays in response to the subjects covered in class. All texts are in original Chinese. Class will be conducted entirely in Chinese. Needs to complete 2 courses at the 300-level at Union or be able to speak and write at the paragraph level on a wide variety of familiar or general topics; contact any Chinese professor for permission if you have experience in the language. **Prerequisite(s):** Take CHN 302 or by instructor permission. **CC:** LCCC, HUM, WAC **ISP:** AIS

CHN 489 - Chinese Senior Project

Course Units: 1.0 This project serves as a required, capstone course in the Chinese major. The project is designed in consultation with the faculty coordinator of senior projects. **Prerequisite(s):** Intermediate-High to Advanced-Low proficiency or permission of the faculty coordinator. **CC:** LCCC, WS

MLT 200 - Modern Chinese Literature

Course Units: 1.0 An introduction to Chinese literature in the 20th Century. The publishing industry, and especially literature, played an influential role in shaping China's modern development. Students will study the origins of the New Culture movement's "new literature," analyze "revolutionary romanticism" and art for the masses, as well as examine contemporary works of popular fiction. The course relates China's literary and cultural trends within the local and global dimensions of modernity. All works in English. **CC:** HUL, LCC, HUM **ISP:** AIS

MLT 201 - Chinese Cinemas

Course Units: 1.0 From the glitzy production studios of 1930s Shanghai to the contemporary hinterlands of China, the backstreets of Hong Kong, and the towns of Taiwan, this course examines the
development and transformation of Chinese cinema. It will explore questions of aesthetics, Chinese identity, transnationalism, and representation. **CC:** HUM, LCC, WAC **ISP:** AIS, FLM

MLT 202 - Gender and Sexuality in Modern China

Course Units: 1.0 The course examines gender and sexuality in 20th-century China as a gateway to understanding the political, cultural, and economic realities of China today. We consider the figure of the "New Woman" during China's civil war and World War II, the androgynous ideal after the founding of the People's Republic, the "Successful Man" during China's economic reform, and the articulations of "Comrades" as part of local, national, and international conversations. Readings in English. All films subtitled. **CC:** HUL, LCC **ISP:** AIS, GSWS

MLT 203 - Asian American Film and Performance

Course Units: 1.0 An examination of topics in Asian American studies through film and performance by and about Asian Americans. Class material draws from independent filmmakers, theatrical and artistic performances, as well as theoretical and critical texts on culture and diversity, gender, the diaspora, and ethnicity. **CC:** HUM, LCC **ISP:** AIS, AMS, FLM, GSWS

MLT 204 - Literary Traditions in East Asia

Course Units: 1.0 Literary developments in East Asia, looking closely at the aesthetic and philosophic foundations of its varied literature through poetic genres, story forms, oral storytelling, travel literature, and drama. **CC:** HUL, LCC, HUM, WAC **ISP:** AIS

MLT 205 - Perspectives in Modern East Asian Literature

Course Units: 1.0 The literary and artistic developments in East Asia since the mid-19th century. The course considers questions of tradition, culture, modernity, globalism, and technology by examining cultural artifacts - novels, short stories, plays, paintings, architecture, music, and film. **CC:** HUL, HUM, LCC **ISP:** AIS

MLT 208 - Chinese Medicine

Course Units: 1 This course covers the philosophical and practical origins of Chinese medicine to the political, social, and transnational realities of modern day research and practice. It examines qi, yin and yang, health and disease, as foundational concepts in the Chinese cultural worldview. The course provides an overview of different types of traditional medicine, and its focus on nourishing a healthy life, harmonious balance with self and nature. The course compares Chinese and Western approaches to disease and treatment, providing a more nuanced understanding of biomedicine and scientific inquiry. **CC:** HUM, LCC, WAC **ISP:** AIS

MLT 209 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** ENS 222 **CC:** LCC, SET, HUL, HUM, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

MLT 210 - China in the News

Course Units: 1 Over the past few decades, China has emerged as a key player in global affairs. US news media and reports about China often sound the alarm bell that creates fear that China's economic growth and political sphere of influence will disrupt US interests. This course focuses on making sense of current events in China and other Chinese-speaking countries and how these events are represented or misrepresented in US news media. The amount of information circulating about China is rich and often times overwhelming. We will use media literacy tools to examine how the framing of news contentinfluences assumptions, attitudes, and behaviors. We will focus on student-driven topics, such as the COVID-19 pandemic, nationalism, etc. to think critically about perspectives, reliable evidence, and freedom of expression. Students will become familiar with the role of mainstream and social media in both the US and China and how they shape perception. **CC:** LCC, HUL, WAC, GCHF, GSPE **ISP:** AIS

Civil Engineering

CEE 101 - Engineering Graphics

Course Units: 1 Engineering graphics with emphasis on engineering drawings and introduction to modeling. Topics include sketching, descriptive geometry, sectioning, auxiliary views, site drawings, CAD, and building techniques. AutoCAD software package is used extensively in this course. **CC:** GCAD

CEE 201 - Mechanics 1

Course Units: 1 Analysis of forces acting on particles and rigid bodies in static equilibrium; equivalent systems of forces; friction; centroids and moments of inertia; introduction to energy methods. **Prerequisite(s):** PHY 120 , MTH 110 (or equivalent)

CEE 203 - Probability & Statistics

Course Units: 1 An introductory calculus-based statistics class for engineers covers topics in data collection, probability, continuous and discrete probability distributions, data collection and presentation, statistical inference, confidence limits, uncertainty analysis, tolerance intervals, analysis of variance, least squares regression, and an introduction to design of experiments. **Prerequisite(s):** MTH 115

CEE 208 - Water, Sanitation, Health

Course Units: 1 This course will examine the connections between water, sanitation, and public health. Students will learn about water sources and potential sources of contamination; the role of drinking water and wastewater treatment in reducing outbreaks of disease; and explore real world examples of water and sanitation concerns. Students will work in small teams to critically explore a global water, sanitation and health issue of interest to them with the goal of understanding the physical and societal drivers of the issue, key constraints, and potential solutions. **CC:** GETS **ISP:** ENS

CEE 212 - Mechanics 2

Course Units: 1 An introduction to kinematics of 3-D motion of rigid bodies, momentum principles for rigid bodies, variational formulation, stability of motion, vibration analysis, and continuous systems. **Prerequisite(s):** CEE 201 , MTH 115 or IMP 121

CEE 222 - Structural Materials w/Lab

Course Units: 1 This course develops an understanding of the natural characteristics, methods of manufacturing, structural design of sections, construction, and testing of civil engineering materials. The methods of testing are those

standardized by the American Society for Testing and Materials (ASTM). Basic civil engineering materials covered in this course are aggregates, masonry, wood, Portland cement concrete, and asphalt. Professional design procedures recommended by the American Concrete Institute (ACI), the Masonry Society, and the Asphalt Institute (AI) will be used. **Prerequisite(s):** CHM 101

CEE 240 - Surveying

Course Units: 1 Students will be taught surveying theory and the use of levels, theodolites, microstations, and distance measuring devices. They will collect, analyze, and assemble data into a plan. **Prerequisite(s):** CEE 101

CEE 244 - Mechanics of Materials w/Lab

Course Units: 1 This course is a basic engineering course in applied mechanics that deals with the behavior of solid bodies subjected to various types of loading. Solid bodies considered in this course include axially loaded members, shafts in torsion, thin shells, beams, and columns, as well as structures that are assemblies of these components. The objectives of strength of materials analysis are the determination of the stresses, strains, and displacements, produced by the loads. Knowing these quantities for all values of load up to the failure load gives a complete picture of the behavior of the body. **Prerequisite(s):** CEE 201

CEE 250 - Contaminant Fate & Transport

Course Units: 1 Collection of domestic wastewater; organic chemistry and microbiology related to wastewater; analysis and design of physical, chemical, and biological processes, viral wastewater monitoring techniques, and operations for treatment of domestic and industrial wastewater; natural purification of streams; and advanced wastewater treatment processes. Current waste containment and pollution prevention practices. Emphasis will be on the design of containment facilities and regulatory processes. Design strategies will include the use of geosynthetics in containment applications, waste characterization, contamination mitigation measures, and landfill monitoring programs. **Prerequisite(s):** CHM 245

CEE 260 - Thermo-Fluid w/Lab

Course Units: 1

Thermal-Fluid Systems is an integrated study of fundamental topics in thermodynamics, fluid statics and mechanics. The course develops the conservation principles for mass, energy, and linear momentum for control volume analysis as well as the 2nd Law of Thermodynamics. Dimensional analysis principles are developed and applied to incompressible flow in pipes, open channel flow, power generation systems, and air-conditioning focusing on the control volume approach. **Prerequisite(s):** CEE 201 , MTH 115 or IMP 121

CEE 301 - Engineering Comp. Modeling

Course Units: 1 Basic programming concepts introduced in CS10X are expanded to investigate computational solutions to engineering problems. A progression of numerical solutions are investigated with student written codes and a gradual progression of implementing library software. Topics include solution techniques to 1-D nonlinear equations, linear systems of equations and nonlinear systems of equations. Interpolation and curve fitting techniques are developed using engineering data. Finite difference integration and differentiation are introduced with a natural progression to solving 1-D, first order differential equations using Euler, Heun, and Runge Kutta algorithms. Higher order differential equations are analyzed using reduction of order. **Prerequisite(s):** CSC 10X

CEE 310 - Fundamental Theory of Structure

Course Units: 1 Structural analysis of determinate and indeterminate trusses, beams, and frames including reactions, axial forces, shear, and moments. Deflections estimated by moment area, conjugate beam, and virtual work methods. Influence lines, compatibility, slope deflection, and moment distribution methods are covered. Students must complete computer analysis and design projects **Prerequisite(s):** CEE 244

CEE 322 - Soil Mechanics w/Lab

Course Units: 1

An introduction to the behavior of soils under different loading conditions. The course explores the natural characteristics, methods of classification, and testing of soils as an engineering material. The methods of testing are those standardized by the American Society for Testing and Materials (ASTM). Basic topics covered are soil exploration, composition, permeability, compaction, compressibility, shear strength and stresses within a soil mass, slope stability, and environmental geotechnology. **Prerequisite(s):** CEE 201

CEE 330 - Fund. of Transportation Eng.

Course Units: 1 An overview of transportation systems and theory. The course will introduce the field of transportation engineering, traffic operations and safety, scheduling, vehicle motion and flow, capacity and level of service, transportation planning, highway drainage, and terminal design. **Prerequisite(s):** CEE 203

CEE 340 - Construction Management

Course Units: 1 Developing a "life cycle" viewpoint in discussing the participants, the processes, and techniques of project management for construction. Topics include an introduction to bid packages, contracts, planning, scheduling, and estimation; orthographic and isometric drawings, dimensioning, auxiliary views, sectioning, and tolerances. Preparation of working drawings and solution of drafting problems in civil engineering related areas such as drawings of steel structures, concrete structures, and foundation layouts. Computer aided graphical representation and data analysis using two and three dimensional charts and plots. **Prerequisite(s):** CEE 101 , CEE 3XX

CEE 350 - Fundamentals of Environmental Engineering

Course Units: 1 This course provides an overview of the foundational principles of physics, chemistry, biology, and engineering to understanding and addressing the major issues facing environmental engineers. In particular, quantitative assessments of water quality, air quality, soil quality, and solid/hazardous waste management will be addressed with a focus on minimizing the human health and environmental impacts of contamination. A problem-solving and case study approach will be used to address the topics covered and quantitative methods of mass and energy balances will be emphasized throughout the term. The technical aspect of environmental engineering will be contextualized through the chosen case studies and through an overview of environmental regulations and policy in the US. **Prerequisite(s):** CEE 260

CEE 360 - Env. Hydraulics w/Lab

Course Units: 1 Surface and groundwater hydrology; reservoir, lake, and stream pollution; water and wastewater treatment. Applications of fluid mechanics principles to design of civil engineering fluid systems, including flow measurement, single and multiple pipelines, water distribution networks, hydroelectric power generation, and flood control. Emphasis on computer assisted methods for design. **Prerequisite(s):** CEE 260

CEE 491 - Capstone Design 1

Course Units: 1 In this first term of the two term design course sequence students work in teams to research, ideate, and design potential solutions to open-ended projects. The first term of this design course will focus on professional practice, effective teaming and communication, and the beginning phases of the design process including but not limited to exploratory brainstorming, relevant documentation and regulations, site planning, and sustainability in design. The term will culminate with a presentation and written report detailing design assumptions, site and project constraints, case studies, and alternatives considered. **Prerequisite(s):** CEE 440 or any CEE 4XX

CEE 492 - Capstone Design 2

Course Units: 1 In this second term of the two term design course sequence students work in teams to select, design, prototype (if appropriate), and effectively present solutions to open-ended projects. The second term focuses on additional development of teaming and communication skills, discussion of professional ethics and licensure, design selection, relevant regulatory documents, and the detailed design needed for Civil and Environmental Engineering designs. Teams will create presentations and written reports that cover the execution of the selected design in detail including technical calculations and drawings, cost, safety, design/construction schedule and feasibility.
Prerequisite(s): CEE 491

Classics

CLS 099 - The Bible: An Introduction

Course Units: 1.0 This course is a basic survey of the most historically and culturally important book in the world. Actually, the Bible is not a single book, but a complex anthology of many different genres, including history, legend, myth, law, poetry, prophecy, philosophy, and an astonishing variety of religious texts, from passionate prayers to bitter complaints against God, composed over the course of something like a thousand years. In addition to reading the most essential parts of the Old and New Testaments, we will also examine some of the countless ways that the Bible has left an imprint on modern western and American life. No previous acquaintance with the Bible is required. **Cross-Listed:** EGL 099 **CC:** HUL, HUM

CLS 110 - Ancient Egypt: History and Religion

Course Units: 1.0 This course offers an overview of the history of ancient Egypt from the rise of the state under the first pharaohs (3200 BC) to its incorporation into the Hellenistic and Roman empires. Attention is given to political and social organization, foreign relations, and religion based on a study of relevant ancient texts (in translation) and archaeological evidence. **CC:** LCC, HUM **ISP:** AFR, REL

CLS 111 - Ancient Iraq: History and Religion

Course Units: 1.0 Ancient Iraq is often termed 'the cradle of civilization' since it is here that agriculture, urbanism, and writing first occurred. This course examines the early history of Iraq (ancient Mesopotamia) from the development of agriculture and permanent settlements through to the establishment of the first cities and states, down to about 1600 BCE. The class examines the social and economic contexts in which early Mesopotamian culture emerged, and it also gives attention to religious and religion-political ideas **Cross-Listed:** REL 111 **CC:** LCC, HUM **ISP:** REL

CLS 120 - SACRED SPACE The History of Greek Sanctuaries

Course Units: 1 Virtually every facet of the Greek lived experience occurred with reference to their relationship to their gods: Greeks seldom ate meat outside of sacrifice; they sought oracles about anything from waging war to lost pillows;

they staged their plays around altars. In many ways, we only have a unified concept of "the Greeks" due to their shared experience of the sacred. This course will explore how the Greeks experienced the Sacred in some of their most important sanctuaries to the gods, and how those sanctuaries both shaped and were shaped by the evolution of Greek culture(s) and communities.

CLS 121 - History of Greece

Course Units: 1.0 Investigation of the circumstances that led to history's first democracy, the buildings on the Acropolis and the development of Greek literature from Homer to Sophocles and Plato; the invention of the "Western way" of war; the evolution of the Greek poleis and the confrontation with the emerging nation-state of Macedonia; the epochal wars of the Greek states with Persia and the disastrous conflict of Athens and Sparta in the Peloponnesian War; and Alexander's conquest of the "world" from the Mediterranean Sea to the rivers of India in a little over ten years. Readings include Homer's Odyssey, selected lives of Plutarch, and Thucydides. **CC:** LCC, HUM, HUL, GCHF, GLIT, GSPE

CLS 126 - The Rise of the Roman Republic

Course Units: 1.0 The rise of Rome from its foundation (traditionally 753 BC) to the assassination of Caesar in 44 BC and the rise of his adopted son Octavian. How did a remote backwater of the Mediterranean rise to imperial power? Why did its constitutional machinery collapse? Was military dictatorship unavoidable? **CC:** LCC, HUM, GCHF

CLS 129 - History of the Roman Empire

Course Units: 1.0 The Roman Empire from the rise of Octavian (later called Augustus) to decline, conversion, and final collapse circa AD 476. Augustus established Roman rule on the basis of his legions, a monarchy cloaked as republican government, and religious innovations that included formal worship of the emperor as a god on Earth. This system endured for centuries, but faced increasingly violent threats both from outside (Germanic tribes, Persians, Parthians) and from within (revolts, rebellions, Christians). How did Rome manage to endure as long as it did and why did Rome fail? **CC:** HUL, HUM, LCC, GCHF

CLS 132 - Religion in the Pagan World

Course Units: 1.0 An examination of particular cults and the performance of cult in ancient Greek and Roman societies, and consideration of the relationship of the individual and the state to deity in the pre-Christian world. Emphasis on ancient sources. **CC:** LCC, HUM, JCHF **ISP:** REL

CLS 133 - Introduction to Etruscology

Course Units: 1 **CC:** LCC

CLS 134 - Classical Art and Architecture

Course Units: 1.0 An introductory survey of the arts of Greece and Rome, including painting, sculpture, architecture, and decorative arts. Emphasis will be placed upon learning art historical and archaeological terminology and methods, the place of art and architecture in ancient society and culture, and contacts with other cultures, in addition to becoming familiar with the most important monuments, artists, and patrons. **Cross-Listed:** AAH 110 **CC:** LCC, HUM **ISP:** REL

CLS 135 - In Search of the Past: Greek and Roman Historiography

Course Units: 1.0 An introduction to the origins, purpose, and methodology of the writing of history in the classical world. **CC:** HUL, LCC, HUM

CLS 137 - Greek and Roman Biography

Course Units: 1.0 A study of the origin and development of the genre of biography from the fourth century B.C. to the second century A.D., with extensive readings (all in English) of Nepos, Suetonius, and Plutarch. **CC:** HUL, LCC, HUM

CLS 138 - Introduction to Roman Archaeology

Course Units: 1.0 This course introduces students to the archaeology of the ancient Roman world. We explore major themes in the study of that world, such as urbanism, the economy, identity, and religion, by examining the main categories of archaeological evidence for the reconstruction of Roman society. Along the way, we investigate material culture through the eyes of people of varied backgrounds and experiences - enslaved captives of war, powerful matriarchs, the urban poor, megalomaniacal emperors, and more - and discuss recent developments in archaeological research methods **CC:** HUM, LCC

CLS 139 - City of Rome

Course Units: 1.0 This course examines the city of Rome, addressing sites in their historical and cultural contexts. The focus is the ancient city, but we also examine the city at various periods in history, including World War II and the present day. We consider how and why a city gets built, what it means to live in a city, and who we can "read a city." Topics covered include venues of spectatorship, religious sites, the city of the emperors, water systems and roads, the political city, and travel and tourism. All readings are in English. **CC:** LCC, HUM

CLS 140 - Introduction to Greek Archaeology

Course Units: 1.0 For thousands of years, the Aegean has been home to dynamic societies whose complex interactions with each other and with the broader region produced some of the most distinctive cultural and political achievements of the ancient world. This course introduces students to the physical remains these societies left behind. We study key concepts of Greek archaeology, including issues of chronology and ethics, as well as major themes in the study of the ancient Greek world, such as religion and the emergence of the city-state. Special attention is paid to new developments in archaeological research methods. We begin around 3000 BCE with the rise of the region's first complex civilizations, and end around 100 BCE with the transformations brought about by Alexander the Great. Along the way, we explore how archaeological investigations reveal the distinctiveness of ancient Greece and help us reconstruct the daily lives of people in antiquity. **CC:** HUM, LCC, GCHF

CLS 141T - Classical Greek Archaeology

Course Units: 1.0 An introduction to the study of archaeology with field trips to various sites in and near Athens. Four hours per week. Offered only as part of the Term Abroad in Greece. **CC:** LCC

CLS 142 - Special Topics in Classics

Course Units: 1.0 **CC:** HUM

CLS 143 - Classical Mythology

Course Units: 1.0 Greek and Roman myths, with emphasis on the ancient sources. All readings will be in English. **CC:** LCC, HUL, HUM, JCHF, JLIT **ISP:** REL

CLS 146 - Sex and Gender in Classical Antiquity

Course Units: 1.0 The representations and realities of sexuality and gender in classical Greece and Rome. Primary focus on how ancient writers formulated the categories of "feminine" and "masculine" in discussions of ethics, nationality, education, politics, and science. This will enable students to think critically about some of the central literary works in the Western tradition through the socially charged categories of gender. Attention will also be directed to how literary representations compare with the actual social experience of ancient women, insofar as we may reconstruct it through the reading of literary, archaeological, and artistic evidence in social, familial, legal, and religious contexts. **CC:** JCHF, JLIT, JSPE, HUL, HUM **ISP:** GSW

CLS 147 - Women in Ancient Rome

Course Units: 1 This course will address the lives of women in ancient Rome. We will examine the themes of labor, dress, family, religion, law, and medicine, among others, in a variety of sources (literary, epigraphic, visual). We will study both the lived realities of Roman women and how the latter were perceived and represented in ancient society. **CC:** HUM, LCC, JCHF **ISP:** GSW

CLS 150 - Ancient Philosophy

Course Units: 1.0 An examination of issues debated by ancient Greek and Roman philosophers that became central to western philosophy, including the nature of reality, the criteria for knowledge, the difference between good and pleasure, and the principles of political justice. Discussion of readings from the Pre-Socratics, Plato, Aristotle, the Epicureans and the Stoics **Cross-Listed:** PHL 251 **CC:** HUM, GCHF

CLS 151 - The Ancient World in Film and Literature

Course Units: 1.0 Greco-Roman antiquity has been a favorite topic of Hollywood for years. This fascination continues today, with the recent appearance of major blockbusters as well as TV productions. Why do the Greeks and Romans appeal to a modern audience? This course will consider ancient texts in translation alongside their modern film representations. Our goal will not be to consider where the films went "wrong." Instead, we will question how these films recast and reinterpret classical texts to reflect modern interests. This course will include an "entrepreneurship module." We will question what is entrepreneurship and if Hollywood's commodification of the ancient world is entrepreneurial. **CC:** LCC, HUL, HUM, JCAD, JCHF, JLIT **ISP:** AMS, FLM

CLS 153 - The Environment in the Ancient World

Course Units: 1.0 Students will discover how ancient Mediterranean societies interacted with the natural world, as revealed by history, art and literature, and archaeology. Some of the questions we will investigate include: how did the Mediterranean environment affect and determine everyday life, both in cities and in rural areas? How did ancient societies manage their food supply? What was their view of nature? How did they react to ecological crisis? And, finally, how can we use their outlook on and treatment of the environment to inform our own approach? **CC:** HUM, LCC, GCHF **ISP:** ENS, STS

CLS 154 - Poetry and the Cosmos

Course Units: 1.0 An examination of Greek and Roman poets' attempts to understand the origin and development of the universe, and of human beings' place in it. Readings (all in English) will include Hesiod, the pre-Socratic philosophers, and Lucretius. **CC:** HUL, LCC, HUM **ISP:** REL

CLS 156 - The Ancient Economy

Course Units: 1 This class presents an introduction to economies before economics, a study of economic activity in the Greco-Roman world. Ancient Greece and Rome have been called some of the first "global" economies; and using textual sources, archaeology, and techniques from the natural and social sciences, this class will not only look at basic elements of economic activity in the ancient world-demographics, trade, monetization, industry-but also ask critical questions about how-or if-modern economic methods can be applied to the distant past. **CC:** HUM, LCC, SOCS, GCHF, GDQR, GSPE

CLS 157 - Entrepreneurship in the Ancient World

Course Units: 1.0 **(TBD: Staff)** "Entrepreneurship" (or seizing upon and exploiting opportunity) is a mindset that has existed at various times and places. Through a variety of ancient sources, including legal, historical, and literary works, students will use the ancient world as a laboratory in which to observe and to assess what may or may not have constituted opportunity in the past and to examine strategies employed (as well as opportunities missed) for taking advantage of available resources in a variety of situations: economic, political, and religious. **CC:** HUM, LCC

CLS 157T - Entrepreneurship Anc World

Course Units: **CC:** HUM

CLS 159 - The Ancient World & Race

Course Units: 1 Learn how the ancients thought about race and ethnicity-and how the reception of the ancient world shapes and is shaped in turn by modern notions of race and ethnicity. Investigate how categories of race and ethnicity are presented in the literature and artistic works of Greece and Rome. Case studies will pay particular attention to such concepts as: notions of racial formation and origins; ancient theories of ethnic superiority; and linguistic, religious and cultural differentiation as a basis for ethnic differentiation. **CC:** JCHF, JLIT, JSPE, HUM, LCC

CLS 160 - The Individual in Ancient Society

Course Units: 1.0 A study of the evolving concept of the individual in antiquity and the changing relationship of the individual and the family, state, and nature. Readings in English of major ancient authors. **CC:** HUL, LCC, HUM

CLS 161 - The Heroic Journey: Survey of Ancient Epic

Course Units: 1.0 An examination of four great epics of classical antiquity: Homer's Iliad and Odyssey, Virgil's Aeneid, and Ovid's Metamorphoses. All readings in English. **CC:** HUL, LCC, HUM

CLS 162 - Greek and Roman Tragedy in Translation

Course Units: 1.0 Readings in classical Greek tragedy and the tragedies of Seneca and selections from other Roman works. **CC:** HUL, LCC, HUM

CLS 163 - Greek and Roman Comedy in Translation

Course Units: 1.0 Readings from the Greek comedies of Aristophanes and Menander, the Roman comedies of Plautus and Terence. **CC:** HUL, LCC, HUM

CLS 164 - Art and Architecture of Ancient Greece

Course Units: 1 **Cross-Listed:** AAH-111 **CC:** HUL, HUM, LCC

CLS 165 - The Art and Architecture of Ancient Rome

Course Units: 1 **Cross-Listed:** AAH-112 **CC:** HUM, LCC

CLS 168 - Ancient Novel

Course Units: 1.0 A survey of the novel and its development in antiquity. Readings include a selection of complete and fragmentary Greek romances by Chariton, Xenophon of Ephesus, Achilles Tatius, Longus, Heliodorus, and Lucian. The Roman comic novels will be Petronius's Satyricon and Apuleius's Metamorphoses. All readings in English. **CC:** HUL, HUM

CLS 178 - Ancient World Mythology

Course Units: 1.0 The myths of Greece, Rome, and the Ancient Near East, Egypt, Sumer, Babylonia, India, et al. reveal surprising similarities and startling differences. A comparative approach illuminates the peculiar characteristics of the various traditions. No culture exists in isolation. These societies were all subject to manifold political (and sometimes even violent) "multicultural" pressures. Rome itself, whose poet Ovid composed the "Bible" of the Western mythological tradition, stood at the head of a vast amalgam of peoples from the cold forests of Northern Europe across the god-infested lands of Greece to the ancient sands of Egypt and beyond. Everywhere we look we will find the interactions and conflicts of differing peoples, traditions, gods. We will listen to their sacred stories, their myths, and, through active comparison and investigation, strive to gain a general overview of the facts, a general understanding of their differing religious conceptions, and perhaps, we may hope, a glimpse into their ancient wisdom. The course will cover broad mythical themes: creation, gods, the underworld, and heroes. Other topics will include the nature of sacrifice and ritual, ancestor-worship, the afterlife, divine kingship, the role of myth in political propaganda, the role of politics and religion in myth, gender issues, and related themes. Given the vast range of the material, our journey will of necessity be selective. Lectures will range, for example, from general presentations of one cultural system to detailed examination of one particular type of god across several cultures. Although much of the focus will be on the ancient myths of Greece, Rome, Egypt, the Near East, and India, we will examine some (relatively) more recent myths from Africa and the Americas as well. **CC:** LCC, HUM, JCHF, JLIT **ISP:** REL

CLS 186 - Roman Law and Society

Course Units: 1.0 A survey of Roman law with special attention to constitutional history in the context of the conceptual development of civil law. Basic concepts of Rome's civil law include "person" (who qualified and under what conditions?), "property" (at the end of the day, what else was there?), "succession" (i.e., who inherited property when the owner died?), "contract" (the fine print has been important for a long time!), and "delict" (wrong-doing, damages, and remedies or, failing that, punishments). We will look, in other words, at the Roman constitution and its intersections with basic civil rights and the procedures for conducting one's affairs legally. Crimes and their punishments will hold our interest too, as will the influence of Roman legal thinking on European and American jurisprudence. **CC:** LCC, HUM **ISP:** LAW

CLS 187 - Capital Punishment in the Ancient World

Course Units: 1 This course provides a detailed overview of capital punishments in ancient Greece and Rome. Each type of punishment will be analyzed from different angles: social, historical, literary and philosophical. The analysis of the various issues will be sustained by gradual reading of the texts required for the course, and by the analysis of significant evidence concerning the topic. Particular emphasis will be given to the thorough study of the primary

sources, both literary and archaeological. Regular discussions of the assigned readings will take place every single session and the various contents of the readings will be included both in Quizzes and exams. Two quizzes, a Midterm and a Final exam will assess the student's progress. **ISP:** LAW

CLS 189 - Capital Punishment in the Ancient World

Course Units: 1 This course provides a detailed overview of capital punishments in ancient Greece and Rome. Each type of punishment will be analyzed fromdifferent angles: social, historical, literary, and philosophical. The analysis of the various issues will be sustained by gradually reading the texts required for the course and by analyzing significant evidence concerning the topic. Particular emphasis will be given to the thorough study of the primary sources, both literary and archaeological. Regular discussions of the assigned readings and the content will occur every single session. **CC:** HUM, LCC, **ISP:** LAW

CLS 190 - Science and Technology in the Ancient World

Course Units: 1.0 This course is an introduction to the scientific and technological developments during the Greek and Roman periods. Students will deepen their understanding of the scientific method, acquire skills in its application in the evaluation of evidence, and learn about the impact of science and technology on ancient civilization. The time periods covered in this class will stretch from Bronze Age of Greece to the Late Roman Empire. This course will discuss a broad range of scientific and technological topics. Students will learn about this crucial aspect of antiquity predominantly through the reading of original sources in translation. Because of the diverse nature of the topics, the authors will range greatly, including such authors as Hesiod, Pliny the Elder, and Frontinus. Students will be expected to draw conclusions from the primary source material as well as connect the ancient texts to other scholarly readings. The secondary reading will be drawn from a variety of academic disciplines, including classics and history of science. Ultimately, students will gain a better understanding of the role that ancient technological and scientific developments have had in their own world. **CC:** HUM **ISP:** STS

CLS 191 - Ancient Engineering

Course Units: 1 How did people living in the ancient Mediterranean region physically transform the world around them, and what do those transformations tell us about their values and beliefs? We'll examine major engineering successes (and failures) such as temples, aqueducts, catapults, and more, using multiple forms of evidence, from archaeology, visual imagery, and inscriptions, to re-enactment and 3D modeling. **CC:** HUM, GETS **ISP:** ENS

CLS 192 - Ancient Medicine

Course Units: 1.0 This course explores the Greek and Roman roots of Western medicine. How did the Hippocratic writers, Galen, and other physicians understand and treat the ailments of patients? And what did it mean, in the first place, to be a physician or a patient two millennia ago. **CC:** HUM **ISP:** STS

CLS 193 - History Done Digitally

Course Units: 1 What do you think of when you hear "Humanities"? If you ask someone in the humanities what they study, you may hear a hundred different answers: great authors, established historians, artistic masterpieces. You seldom hear "Data." But that is exactly what all of these works are. In the modern world, countless tools have been developed to facilitate the access, analysis, and dissemination of data. In this course, we will learn how to use various technologies to both ask and answer questions traditional to the humanities and come up with new ones, with a focus on the ancient and medieval world. **Cross-Listed:** HST-140 **CC:** HUM, QMR, GDQR **ISP:** STS

CLS 201 - Home, Myth, Religion in Archaic Greece

Course Units: 1 In this research seminar, we will study the evidence provided by Homer's Iliad (in translation) for understanding ancient Greek attitudes to myth and religion, especially under pressure of war. We shall begin with a close reading of our ancient source. We will place this ancient evidence in the context of work by modern scholars who rely on this same evidence in their own investigations to similar questions. Students will also formulate their own questions, and then delve deeply into finding answers in light of their own close reading of the sources in conversation with modern scholarship. **CC:** HUM, WAC-R

CLS 202 - Archaeological Methods

Course Units: 1 Believe it or not, there is more to archaeology than raiding tombs or cracking a bullwhip. What can we learn about people in the past through physical remains? What else do archaeologists do besides dig in the dirt? Students address these and other questions by conducting original research through a series of hands-on experiences both in and outside the classroom, including architectural drawing, spatial analysis, archival research with historical documents, isotopic analysis, demographic fieldwork in a local cemetery, 3D modeling, and museum exhibition design. Students work in teams, lead class discussions, present original research, and use their new skills in interpreting material culture to analyze the world around them in new and surprising ways. **CC:** HUM

CLS 220T - Experiencing Roman Britain

Course Units: 1 The course will run at the site of Eboracum, the ancient Roman name for the modern city of York. It is a place with significant remains of Roman Britain on view to the public. We will think about the city's ancient past, as well as how that past plays a role in the city's present. We will consider the lives of people in Roman Britain generally and Roman York more precisely, from the occupation by the Romans until their departure. We will use a variety of approaches to reconstruct the lives of people in the region, including historical and literary texts, material culture,and epigraphy.

CLS 230 - Judaism and the Origins of Christianity

Course Units: 1.0 We know that Jesus of Nazareth was Jewish, so how is it that Christianity and Judaism became separate religions? This course attempts to answer this question by investigating the nature of the relationship between earliest Christianity and Rabbinic Judaism, drawing out their shared roots in the religion and literature of ancient Israel, and exploring the diverse expressions of second temple Judaism among which the two religious traditions emerged. It also explores their distinctive religious teachings and scriptural interpretations with a particular interest in understanding how and why Christianity and Judaism, despite their commonalities, parted ways and became independent religions. **Cross-Listed:** REL 230 **CC:** HUM, LCC, WAC

CLS 242 - The Philosophy of Aristotle

Course Units: 1.0 Students explore the philosophical ideas of Aristotle, perhaps the most celebrated and influential thinker in the history of philosophy. Particular attention will be paid to Aristotle's theory of being, which addresses the organic structure of both living things (plants and animals) and entities whose complex articulation is similarly "organic" (human political communities, works of art and other human artifacts). Readings will be from a variety of Aristotle's writings and may include Physics, Metaphysics, On the Soul, On the Parts of Animals, Politics, Poetics, and Aristotle's writings on logic, ethics, and rhetoric. **Cross-Listed:** PHL 342 **CC:** HUM

CLS 250 - Death in the West

Course Units: 1.0 An introduction to the "history of death" that has emerged from the fields of anthropology, archaeology, sociology, and history in the last 25 years. Through readings that present the death rituals of such different societies as eighth century B.C. Greece, the South Pacific islands, medieval Europe, and modern America, the course will examine the problems associated with composing a coherent account of how and why cultures respond to the threat

that death presents to the social order, why that response can change over time, and the problems involved in a "history of death" and how this relates to the areas and methods of "traditional" history. **CC:** LCC, HUM

CLS 295H - Classics Honors Independent Project 1

Course Units: 0.0

CLS 296H - Classics Honors Independent Project 2

Course Units: 1.0

CLS 311 - Plato's Republic

Course Units: 1 Most people care deeply about justice and strive to live just lives. But what is justice and why should we try to be just? What if we always do the right thing, but we are constantly treated badly and as if we are untrustworthy? Should we be just even if others think we are dishonest and corrupt? Is justice worth pursuing for itself? If justice is good how do we make our cities and our fellow citizens just? What kind of ruler would make a city just? In this course we will try to answer these questions as we work our way through Plato's most famous work, Republic. Each class will be organized around specific question(s). We will focus most of our attention on analyzing and interpreting Plato's answer to these questions, but we will also try to answer these questions ourselves and see whether or not we agree with Plato. **CC:** HUM

CLS 320 - Early Christian Thought

Course Units: 1.0 Christianity emerged in the context of late antique Greco-Roman culture with its roots in ancient Judaism. It drew on both of these in developing distinctive teachings regarding Christ, God, salvation, the church, ethics, and society. This course examines how over the period 50-450 CE debates around these topics led to the articulation of the normative Christian tradition. **CC:** HUM

CLS 361 - Seminar in Classical Studies

Course Units: 1.0 **CC:** HUM

CLS 490 - Classics Independent Study 1

Course Units: 1.0 Advanced individual study for qualified students. Periodic reports on a period of Greek or Roman history or a problem in Greco-Roman civilization. **Prerequisite(s):** Permission of the department chair.

CLS 491 - Classics Independent Study 2

Course Units: 1.0 Advanced individual study for qualified students. Periodic reports on a period of Greek or Roman history or a problem in Greco-Roman civilization. **Prerequisite(s):** Permission of the chair.

CLS 492 - Classics Independent Study 3

Course Units: 1.0 **(Fall, Winter, Spring: Staff)** Advanced individual study for qualified students. Periodic reports on a period of Greek or Roman history or a problem in Greco-Roman civilization. **Prerequisite(s):** Permission of the department chair.

CLS 497 - Classics Senior Project

Course Units: 1.0 One-term senior project. **CC:** WS

CLS 498 - Classics Senior Thesis 1

Course Units: 0.0 Independent reading and thesis in a subject in the field of Greek or Roman history or Greco-Roman civilization. **Prerequisite(s):** Permission of the department chair.

CLS 499 - Classics Senior Thesis 2

Course Units: 2.0 Independent reading and thesis in a subject in the field of Greek or Roman history or Greco-Roman civilization. **CC:** WS

Computer Science

CSC 033 - Programming Practicum: Introduction to R

Course Units: 0.0 An introduction to the programming language R and how it can be used for statistical analysis and visualization of data. Students will learn how to write basic R programs that can read, write, and manipulate data. They will make use of R functions for executing common statistical analysis and learn how to display the results using graphs and charts. Through a series of projects, students will get experience with writing their own functions, learn how to make use of R documentation and how to extend their own knowledge of the language. A student can receive a pass/fail credit equivalent to one elective course, if they receive a passing grade in this course as well as in two terms (normally in a row) of the CS practicum course (CSC 281, 282).

CSC 055 - Working with the Web

Course Units: 1.0 Design, writing, and publishing of WWW pages; creation of graphical images; study of the underlying Web technologies such as communication protocols, digital encoding and compression; programming of Web pages. **CC:** SET **ISP:** STS

CSC 080 - History of Computing

Course Units: 1.0 A survey of tools for computation, from number systems and the abacus to contemporary digital computers. The course focuses on the development of modern electronic computers from ENIAC to the present. Study of hardware, software, and the societal effects of computing. **Cross-Listed:** HST 292 **CC:** SET **ISP:** STS

CSC 084 - Interactive Fiction Workshop

Course Units: 1 Interactive fiction is storytelling that uses technology to create an interactive "reading" experience, requiring the reader to make choices that influence the plot. In this course you are going to read, critique, and create interactive fiction. You'll develop your storytelling skills, and along the way you'll learn some programming concepts, and history of narrative. video games. We'll also consider how race, gender, class, sexuality, and (dis)ability shape our experiences of these games as players and writers. No previous CS experience is necessary. Students will need access to a laptop for class. (Also count toward GSW, STS.) **Cross-Listed:** EGL 284 **Prerequisite(s):** Take any EGL-100 level or higher or ATH 104 , or a score of 5 on English Composition or Literature AP test. **CC:** SET, HUL, HUM, WAC, JCAD, JETS, JLIT

CSC 088 - Cyborgs!

Course Units: 1 Cybernetic organisms, or "cyborgs," represent the ultimate integration of biology and technology since these are organisms living with abiotic parts. This exciting new interdisciplinary course will provide an introduction to the biological and computer science concepts fundamental to the development of cyborg technology as well as critical evaluation of the consequences of introducing such technology in society. Students taking this course will not just be trained how to develop cyborg technology, but whether or not such technology should be developed for society. **Cross-Listed:** BIO 088 , EGL 188 **CC:** HUL, HUM, SCLB, SET, WAC, GDQR, GETS, GLIT, GNPS

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 104 - Robots Rule! Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a robotics theme. Introduces students to algorithms, basic data structures, and programming techniques. Students will build and program robots, exploring mobility, navigation, sensing, and inter-robot communication. Additional class topics include: history of robotics, social and ethical issues, emotionally intelligent behavior and other current topics in robotics. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 105 - Game Development: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a computer games theme. Introduces students to algorithms, basic data structures, and programming techniques. Computer game development is used as an example application area and students implement their own games throughout the course. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area,

focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 108 - Scientific Computing: Introduction to Computer Science

Course Units: 1.0 Computers are used as tools in analyzing and solving scientific problems as well as being embedded in many applications and experimental equipment used by today's scientists. This course is designed to introduce students to computer programming and problem solving through the use of Python. Python is a language commonly used by the scientific community, and we will focus on using it to address scientific problems, using extensions that facilitate scientific computing. CC: QMR, SET Note: A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 112 - The Processed Pixel

Course Units: 1.0 **Cross-Listed:** AVA 270 **CC:** SET, HUM **Note:** This course does not count as an Introduction to Computer Science the way CSC 103 , CSC 104 , CSC 105 , CSC 106 , and CSC 107 and CSC 108 do.

CSC 118 - Introduction to Computer and Logic Design

Course Units: 1.0 Fundamental material in the area of digital logic circuit analysis and synthesis, and computer organization. The components of digital computers are studied at the gate level, the function level, and the machine organization level. Weekly laboratory exercises are required. **Cross-Listed:** ECE 118 **Corequisite(s):** CSC 118L **CC:** SET **Note:** This course does not count as an Introduction to Computer Science the way CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 and CSC 108 do.

CSC 120 - Programming on Purpose

Course Units: 1.0 An introduction to software design principles aimed at making software more efficient, robust, readable, maintainable, and reusable. An introduction to object-oriented programming and design, including classes, objects, methods, and sub-typing. **Prerequisite(s):** C- or better in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 or CSC 108 . A grade of C- or better is required to continue with any course that requires CSC 120 as a prerequisite. **CC:** SET

CSC 151 - Data Structures

Course Units: 1.0 Basic concepts of data organization and abstraction, software design, stacks, queues, trees, and their implementation with linked structures. Programming in Java. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 120 . MTH 199 can be substituted for MTH 197 **Prereq/Corequisite(s):** A grade of C- or better is required in order to continue with any course that requires CSC 151 as a prerequisite.

CSC 206 - Text Analytics

Course Units: 1.0 This course introduces computational techniques for extracting information from unstructured text. This includes reading in different types of text, preparing text for further processing, summarizing and visualizing basic descriptive statistics, as well as applications, such as sentiment analysis, information retrieval, information extraction, summarization, and topic modeling. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 **CC:** SET

CSC 218 - Embedded Mirocontroller Projects

Course Units: 1.0 **CC:** SET

CSC 233 - Intro to Data Analytics

Course Units: 1.0

Data analytics, the process of analyzing, revealing, interpreting, and visualizing information concealed inside big data, is revolutionizing daily life, as used by companies such as Amazon, Google and Facebook, for the diagnosis of medical conditions or the way medical claims are handled, for investment strategies and real estate pricing, and in academia, with the analysis of historical texts, understanding the deliberations of the Supreme Court or the European Commission, or processing large amounts of genomics data.
In this class, students will be introduced to techniques to acquire data from the web, manipulate and pre-process data into manageable forms, perform analyses from a description and predictive standpoint, and learn the basics of visualizing the results, all with a focus on story telling through data, enhancing data literacy. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 . **CC:** SET

CSC 234 - Data Visualization

Course Units: 1.0 Data has a story which has to be told! Data visualization is all around us, in print and in electronic media. Some of it is accurate and effective, while some is extremely unclear, confusing, or misleading. In this course we will study various approaches to information visualization and associated data analysis techniques. How do we take a lot of data, or very complex data, and present it in ways that allow it to communicate information clearly and effectively? The course will explore applications from science, medicine, social science, and humanities.
Prerequisite(s): C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 .
CC: SET

CSC 235 - Modeling & Simulation

Course Units: 1.0 This course will study modeling and simulation as they occur in and apply to a number of different disciplines. It will cover system dynamics models which address major systems that change with time, and cellular automaton simulations that look more narrowly at individuals affecting individuals. Other topics will include rate of change, errors, simulation techniques, empirical modeling, and an introduction to high performance computing.
Prerequisite(s): C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 **CC:** SET

CSC 236 - Computer Network Protocols

Course Units: 1.0 Design, analysis, and operation of communication protocols for computer networks; TCP/IP, addressing, switching, routing, congestion control, application protocols. **Cross-Listed:** ECE 336

CSC 237 - Data Communications and Networks

Course Units: 1.0 **Cross-Listed:** ECE 337

CSC 240 - Web Programming

Course Units: 1.0 This course addresses the standards in programming applications for the Web. It covers the client-side technologies HTML, CSS, and JavaScript as well as server-side technologies PHP and MySQL. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 **CC:** SET **ISP:** STS

CSC 243 - Bioinformatics: Information Technology in the Life Sciences

Course Units: 1.0 Biology and computer science students will gain a working knowledge of the basic principles of the others' discipline, and will collaborate together on bioinformatics projects. Topics include pairwise and multiple sequence alignments, phylogenetic trees, gene expression analysis, and protein structure prediction. Additional topics will be presented by invited speakers. **Cross-Listed:** BIO 243 **Prerequisite(s):** BIO-205 **or** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 ,or CSC 108 . **CC:** SET **ISP:** STS

CSC 245 - The Computer Science of Computer Games

Course Units: 1.0 This course surveys the field of computer science from the perspective of computer games. Topics explored include: rendering of graphics to a screen, implementation of realistic simulation, use of artificial intelligence in games, handling user input, game physics, collaborative development. Final course project is a complete computer game. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 . **CC:** SET **ISP:** STS

CSC 250 - Algorithm Design and Analysis

Course Units: 1.0 Fundamental algorithms used in a variety of applications. Includes algorithms on list processing, string processing, geometric algorithms, and graph algorithms. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197. Note: A grade of C- or better is required in order to continue with any course that requires CSC-250 as a prerequisite. **CC:** WAC

CSC 260 - Large-Scale Software Development

Course Units: 1.0 Strategies for the systematic design, implementation, and testing of large software systems. Design notations, tools, and techniques. Design patterns and implementation idioms. Implementation, debugging, and testing. Includes team and individual software development projects. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 270 - Computer Organization

Course Units: 1.0 The architecture and operation of the digital computer. CPU design, input/output, computer arithmetic, assembly language. **Prerequisite(s):** C- or higher in CSC 120 **Corequisite(s):** CSC 270L **Lecture/Lab Hours** Includes a laboratory.

CSC 281 - Computer Science Practicum 1

Course Units: 0.0 Under the supervision of a CSC faculty member, students may participate in undergraduate research or a design project. To receive pass/fail credit equivalent to one elective course, a student must receive a passing grade in three terms (normally in a row) of the practicum course. Up to two credits may be earned in this way. **Prerequisite(s):** Permission of the faculty supervisor and the department chair.

CSC 282 - Computer Science Practicum 2

Course Units: 0.0 Under the supervision of a CSC faculty member, students may participate in undergraduate research or a design project. To receive pass/fail credit equivalent to one elective course, a student must receive a passing grade in three terms (normally in a row) of the practicum course. Up to two credits may be earned in this way.
Prerequisite(s): Permission of the faculty supervisor and the department chair.

CSC 283 - Computer Science Practicum 3

Course Units: 0.0 Under the supervision of a CSC faculty member, students may participate in undergraduate research or a design project. To receive pass/fail credit equivalent to one elective course, a student must receive a passing grade in three terms (normally in a row) of the practicum course. Up to two credits may be earned in this way.
Prerequisite(s): Permission of the faculty supervisor and the department chair.

CSC 290 - Computer Science Independent Study 1

Course Units: 1.0 Independent work on a CS topic of interest under the supervision of a CS faculty member. This course should be used for work that the supervising faculty member deems equivalent to a 100-level or 200-level course. For higher level course equivalences, use CSC 490 . **Prerequisite(s):** Permission of the faculty supervisor and the department chair.

CSC 291 - Computer Science Independent Study 2

Course Units: 1.0 Independent work on a CS topic of interest under the supervision of a CS faculty member. This course should be used for work that the supervising faculty member deems equivalent to a 100-level or 200-level course. For higher level course equivalences, use CSC 490 . **Prerequisite(s):** Permission of the faculty supervisor and the department chair.

CSC 292 - Computer Science Independent Study 3

Course Units: 1.0 Independent work on a CS topic of interest under the supervision of a CS faculty member. This course should be used for work that the supervising faculty member deems equivalent to a 100-level or 200-level course. For higher level course equivalences, use CSC 490 . **Prerequisite(s):** Permission of the faculty supervisor and the department chair.

CSC 295H - Computer Science Honors Project 1

Course Units: 0.0

CSC 296H - Computer Science Honors Project 2

Course Units: 1.0

CSC 318 - Digital Design

Course Units: 1.0 **Cross-Listed:** ECE 318 **Corequisite(s):** CSC 318L

CSC 320 - Artificial Intelligence

Course Units: 1.0 Fundamental concepts used in creating "intelligent" computer systems; semantic representation, logical deduction, natural language processing, and game playing; expert systems, knowledge-based systems, and

elementary robotics. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . Recommended: CSC 250 . MTH 199 can be substituted for MTH 197

CSC 321 - Data Mining and Machine Learning

Course Units: 1.0 Introduces Data Mining, where previously unknown and potentially useful information is automatically extracted from data sources, using regularities or patterns of implicit information. Such patterns can be used to make predictions over future data, and be used to explain and understand the nature of that data. Machine Learning is one mechanism by which data mining is achieved. It is used to discover and extract information from raw data. This course will cover tools and techniques of machine learning that are used in practical data mining. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 323 - Evolutionary Robotics Seminar

Course Units: 1 Evolutionary Robotics is a field ofartificial intelligence that uses bio-inspiredmethods to solve interesting optimization problems in robotics. In this WAC-R seminar we'll be intensively reading selected papers from the field, and learning to replicate many of those techniques on our own. **Prerequisite(s):** MTH 197 and C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197. **CC:** WAC-R

CSC 325 - Robotics

Course Units: 1.0 The course will cover basic algorithms necessary for motor control. Building on these methods we will discuss higher level navigation for mobile robots, as well as the sensing necessary for localization of the robot in its environment. Finally, we will also examine the challenges of motion planning for jointed robots with many degrees of freedom. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 329 - Neural Networks

Course Units: 1.0 **(TBD: Staff) Cross-Listed:** ECE 329

CSC 333 - High Performance Computing

Course Units: 1.0 Synchronization and communication in concurrent programs. Parallel computing with libraries for shared-memory programming and for cluster computing. Introduction to algorithms for parallel scientific computing. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 335 - Operating Systems

Course Units: 1.0 Selected topics in operating system development including process and thread management, concurrency, memory and file system management, resource allocation, job scheduling, and security. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 and CSC 270 and Junior standing. MTH 199 can be substituted for MTH 197

CSC 340 - Introduction to Databases

Course Units: 1.0 Introduction to data models and database design. Coverage of network, hierarchical, and relational architectures with emphasis on the latter. Study of relational algebra, entity-relationship modeling, and data normalization. Study of fourth generation query languages including SQL. Introduction to centralized, distributed, federated, and mediated systems. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 350 - Theory of Computing

Course Units: 1.0 A discussion of the fundamental ideas and models underlying computing: properties of formal languages, finite automata, regular expressions, pushdown automata, context-free languages, Turing machines, and undecidability. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 354 - VLSI System Design

Course Units: 1.0 **Cross-Listed:** ECE 354 **Corequisite(s):** CSC 354L

CSC 360 - Software Engineering

Course Units: 1.0 Strategies for the specification, design, production, testing, and support of computer programs; software development models; programming team structures; documentation; and maintenance. **Prerequisite(s):** C- or higher in CSC 260

CSC 370 - Programming Languages

Course Units: 1.0 An introduction to issues in programming language design and implementation. Major programming language paradigms: functional, logic, and object-oriented, and their use. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 and junior standing. MTH 199 can be substituted for MTH 197

CSC 375 - Compiler Design

Course Units: 1.0 Principles and practices for the design and implementation of compilers and interpreters. Will cover the stages of the compilation and execution process: lexical analysis; parsing; symbol tables; type systems; scope; semantic analysis; intermediate representations; run-time environments and interpreters; code generation; program analysis and optimization; and garbage collection. Students will construct a full compiler for a simple object-oriented language. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197. Recommended: CSC 260

CSC 380 - User Interfaces

Course Units: 1.0 Introduction to the field of human-computer interaction (HCI) through the study of user interfaces. Theory and application of what makes an interface usable. Design principles, empirical studies, and statistical analyses will be employed in team-based projects. Students will make extensive use of equipment for recording and analyzing participants in both laboratory and field settings. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 385 - Computer Graphics

Course Units: 1.0 Implementation and use of algorithms for computer graphics. Rendering and representation of 3D objects. Lighting, shading and texture mapping surfaces of 3D objects. Programming interactive graphics applications. Constructing 3D models of real-world objects. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197 **ISP:** FLM

CSC 483 - Selected Topics in Computer Science

Course Units: 1.0 **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 and CSC 250 . MTH 199 can be substituted for MTH 197 **CC:** SET **Note:** Course can be repeated for credit under different topics. Consult with department chair for more information.

CSC 488 - Computer Science Capstone Project

Course Units: 1 This course is required by, and limited to, seniors who are not completing their WS requirement. In this course, students will explore current research in one area of computer science (the choice of topic will vary) by reading, discussing, and critically evaluating scholarly publications and by carrying out their own research on a related topic. Students will gain experience in giving oral presentations and writing conference style papers in computer science. **Prereq/Corequisite(s):** Any CSC 300-leve course that fulfills the WAC-R requirement. **CC:** WS

CSC 489 - Guided Research in Computer Science

Course Units: 1.0 This course is required by, and limited to, seniors who are not completing their WS requirement through the CSC 498-CSC 499 sequence. In this course, students will explore current research in one area of computer science (the choice of topic will vary) by reading, discussing, and critically evaluating scholarly publications and by carrying out their own research on a related topic. Students will gain experience in giving oral presentations and writing conference style papers in computer science. **Prerequisite(s):** CSC 497 and permission of the instructor. **CC:** WS

CSC 490 - Computer Science Independent Study 1

Course Units: 1.0 This course should be used for work that the supervising faculty member deems equivalent to a 300-level or 400-level course. For lower level course equivalences, use CSC 290 **Prerequisite(s):** Permission of faculty supervisor and the department chair.

CSC 491 - Computer Science Independent Study 2

Course Units: 1.0 This course should be used for work that the supervising faculty member deems equivalent to a 300-level or 400-level course. For lower level course equivalences, use CSC 290 **Prerequisite(s):** Permission of faculty supervisor and the department chair.

CSC 492 - Computer Science Independent Study 3

Course Units: 1.0 This course should be used for work that the supervising faculty member deems equivalent to a 300-level or 400-level course. For lower level course equivalences, use CSC 290 **Prerequisite(s):** Permission of faculty supervisor and the department chair.

CSC 497 - Computer Science Capstone Seminar

Course Units: 0.5 Development of the skills necessary for independent research: Reading scholarly works, designing experiments and empirically evaluating their results. Development of a comprehensive senior capstone project proposal. Investigation of professional ethics, skills and responsibilities. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197 **Note:** Normally taken in Spring of the Junior year.

CSC 498 - Computer Science Capstone Project 1

Course Units: 0.75 Design, implementation, and evaluation of the capstone project. **Prerequisite(s):** CSC 497 **CC:** WS **Note:** Normally taken during the Senior year.

CSC 499 - Computer Science Capstone Project 2

Course Units: 0.75 Design, implementation, and evaluation of the capstone project. **Prerequisite(s):** CSC 498 **CC:** WS **Note:** Normally taken during the Senior year.

Electrical Engineering

ECE 101 - The Joy of Electronics

Course Units: 1.0 Introduction to the tools, skills, and principles of electrical and computer engineering. Emphasis is placed on developing an intuitive understanding while learning quantitative methods to design, test, and analyze electronics. Test and measurement tools include oscilloscopes, multimeters, and function generators. Circuit construction techniques include breadboarding and soldering as well as computer software to simulate circuits. Principles such as power, frequency, and modulation are taught through analog and digital electronics projects. Hands-on projects include an audio amplifier, crystal radio receiver, digital clock, and a microcontroller-operated robotic arm. **CC:** SET **Note:** Not open to students who have taken ECE 222 or ECE 225

ECE 102 - Intro to Audio Electronics

Course Units: 1 In this course students will learn about audio electronics by constructing projects such as an audio amplifier, a smart sound generator, and analog and digital filters to remove unwanted noise or interference. In addition to engaging with the engineering design process, students will reflect upon how audio engineering has and continues to impact society through the creation and manipulation of sound. **CC:** SET, JETS **Note:** Not open to students who have taken ECE 218 , ECE 222 or ECE 225

ECE 118 - Introduction to Computer and Logic Design

Course Units: 1.0 Fundamental material in the area of digital logic circuit analysis and synthesis, and computer organization. The components of digital computers are studied at the gate level, the function level, and the machine organization level. Weekly laboratory exercises are required. **Cross-Listed:** CSC 118 **Corequisite(s):** ECE 118L **CC:** SET

ECE 218 - Embedded Microcontroller Projects

Course Units: 1.0 Focuses on the design and implementation of microcontroller systems. Topics include microcontroller architecture, interfacing, programming for control applications, multitasking, and tools used in embedded system design. The course includes a weekly project-based laboratory. **Prerequisite(s):** ECE 118 and one course from the following: CSC 103, CSC 104, CSC 105, CSC 106, CSC 107, or CSC 108 **Corequisite(s):** ECE 218L **CC:** SET

ECE 222 - Introduction to Circuits and Electronics

Course Units: 1.0 Electrical quantities, circuit principles, analysis and response of basic circuits, semiconductor physics, diodes, transistors, and operational amplifiers. Includes a weekly lab. **Prerequisite(s):** PHY 121 or IMP 121 **Corequisite(s):** ECE 222L **Prereq/Corequisite(s):** Not open to Electrical, Computer, or Biomedical Engineering majors, or to students who have taken ECE 225

ECE 225 - Electric Circuits

Course Units: 1.0 Basic electrical circuit concepts and devices such as Ohm's law, Kirchhoff's laws, Thevenin and Norton equivalents, operational amplifiers, analysis methods, capacitors, inductors, ideal transformers, phasors, AC steady state analysis, complex power, frequency response and filters. Includes a weekly lab. Not open to Mechanical Engineering major **Cross-Listed:** BME 225 **Prerequisite(s):** MTH 112 or MTH 113 **Corequisite(s):** ECE 225L

ECE 240 - Circuits and Systems

Course Units: 1.0 Transient analysis of RLC circuits; modeling of circuits using differential equations; system models and properties; Laplace transforms applied to circuit and system design and analysis; system functions; complex frequency; poles and zeros; stability; frequency response; filter design. Includes a weekly lab. Not open to Mechanical Engineering majors **Cross-Listed:** BME 240 **Prerequisite(s):** ECE 225 or BME 225 **Corequisite(s):** ECE 240L **CC:** WAC

ECE 241 - Discrete Systems

Course Units: 1.0 Discrete signals and systems; classification and properties of systems; difference equations; Z-transform; Fourier series, Fourier transforms, the DFT and FFT; filters and filter design; A/D and D/A converters; applications to audio signal processing. Includes a weekly lab. **Cross-Listed:** BME 241 **Prerequisite(s):** ECE 240 or BME 240 **Corequisite(s):** ECE 241L **CC:** WAC **ISP:** FLM

ECE 246 - What Does Data Sound Like?

Course Units: This is an introduction to the field of data sonification, a creative and innovative approach to understanding and communicating by translating data into sound. It goes beyond traditional data visualization methods, offering unique insights and perspectives on datasets from a variety of sources. Students will explore a broad spectrum of interdisciplinary applications, ranging from the practical to the technical to the creative. Through lectures, discussions, and labs, students will gain an understanding of the principles of
data sonification and its applications in the modern world. **Cross-Listed:** AMU 246

ECE 248 - Introduction to Semiconductor Devices and Circuits

Course Units: 1.0 Semiconductors: theory of operation of diodes and transistors; circuit models; basic electronic circuits and amplifiers: transfer characteristics and inverters. Includes a weekly lab. **Prerequisite(s):** ECE 225 or BME 225 **Corequisite(s):** ECE 248L

ECE 281 - Electrical and Computer Engineering Practicum 1

Course Units: 0.0 Under the supervision of an ECE faculty member, students may participate in undergraduate research or a design project. To receive pass/fail credit equivalent to one free elective course, a student must receive a passing grade in three terms of the practicum course. Up to two credits may be earned in this way. **Prerequisite(s):** Permission of the faculty supervisor and the department chair.

ECE 282 - Electrical and Computer Engineering Practicum 2

Course Units: 0.0 Under the supervision of an ECE faculty member, students may participate in undergraduate research or a design project. To receive pass/fail credit equivalent to one free elective course, a student must receive a passing grade in three terms of the practicum course. Up to two credits may be earned in this way. **Prerequisite(s):** Permission of the faculty supervisor and the department chair.

ECE 283 - Electrical and Computer Engineering Practicum 3

Course Units: 1.0 Under the supervision of an ECE faculty member, students may participate in undergraduate research or a design project. To receive pass/fail credit equivalent to one free elective course, a student must receive a passing grade in three terms of the practicum course. Up to two credits may be earned in this way.

ECE 295H - Electrical and Computer Engineering Honors Independent Project 1

Course Units: 0.0 Sophomore project in Electrical and Computer Engineering for students participating in a scholars program. **Prerequisite(s):** Permission of the instructor.

ECE 296H - Electrical and Computer Engineering Honors Independent Project 2

Course Units: 1.0 Sophomore project in Electrical and Computer Engineering for students participating in a scholars program. **Prerequisite(s):** Permission of the instructor.

ECE 310 - Electronic Devices

Course Units: 1.0 Introduction to semiconductors and solid-state devices. Electrons and holes, energy bands, carrier transport and dynamics, recombination and generation; p-n junctions and diodes; bipolar junction transistors; field-effect transistors; and optoelectronic devices (light-emitting diodes, photodiodes, and solar cells). **Prerequisite(s):** ECE 248 or permission of the instructor

ECE 318 - Digital Design

Course Units: 1.0 The design of digital hardware systems at the module level using modern approaches. Datapath and control unit design, hardware description languages, programmable device implementations. Weekly laboratory exercises using electronic design automation tools and a design project are required. **Cross-Listed:** CSC 318 **Prerequisite(s):** ECE 118 **Corequisite(s):** ECE 318L

ECE 325 - Acoustics of Speech Communication

Course Units: 1.0 Acoustics, circuit theory, and signal processing applied to analysis of speech signals; Physiology of speech production; Articulatory phonetics; Acoustical and articulatory description of phonetic features and of prosodic aspects of speech; Perception of speech; Models of speech production and planning; Some applications to recognition and generation of speech by machine, and to the study of speech disorders. **Prerequisite(s):** ECE 241 or BME 241

ECE 328 - Fundamental Internet of Things

Course Units: 1 This course will explore the fundamental concepts of Internet of Things (IoT) and technologies that enable the connection of various useful electronic devices (things) on the internet. Topics will include IoT evolution, architecture and reference models, sensors and actuators, communication technologies (RFID, NFC, Bluetooth Low Energy, Zigbee, 6LowPAN, LoRa, and NB-IoT), protocols (MQTT and CoAP), and the design of simple IoT applications using hands-on projects. **Prerequisite(s):** ECE 218

ECE 329 - Neural Networks

Course Units: 1.0 Topics include the biological basic of artificial neural networks, neuron models and architectures, backpropagation, and deep learning models. **Cross-Listed:** CSC 329 **Prerequisite(s):** CSC 151 or CSC 100-level and ECE 240 or permission of the instructor.

ECE 336 - Computer Network Protocols

Course Units: 1.0 Design, analysis, and operation of communication protocols for computer networks; TCP/IP, addressing, switching, routing, congestion control, application protocols. **Cross-Listed:** CSC 236 **Prerequisite(s):** CSC 100-level and either ECE 118 / CSC 118 or CSC 120

ECE 337 - Data Communications and Networks

Course Units: 1.0 An introduction to the physical and data link layers of data communication networks, including error detection, and local area networks. **Cross-Listed:** CSC 237 **Prerequisite(s):** CSC 100-level and ECE 118 / CSC 118 or CSC 120

ECE 341 - Energy Conversion

Course Units: 1.0 Theory of electromechanical energy conversion; characteristics of transformers and DC induction; and synchronous machines. **Prerequisite(s):** ECE 225 or BME 225

ECE 342 - Power Electronics

Course Units: 1.0 Rectifying devices and rectifier circuits: device characteristics, waveforms, harmonic content filtering. Controlled rectifiers (thyristors, triacs): device characteristics, single phase and multiphase systems. Snubber circuits and divide limitations. DC-DC converters: design, application, topologies. Energy storage element selection and design: capacitors and inductors. **Prerequisite(s):** ECE 248, ECE 350

ECE 343 - Introduction to Electromagnetic Engineering

Course Units: 1.0 Traveling waves: transmission lines; electrostatics; magnetostatics; applications to engineering problems; solutions by analytical and numerical techniques. **Prerequisite(s):** ECE 240, (MTH 117 and PHY 121) or IMP 120 **Corequisite(s):** ECE 343L **Lecture/Lab Hours** One lab per week.

ECE 344 - Electric Machines and Drives

Course Units: 1.0 Introduction to electric drives; understanding mechanical system requirements; DC motors and variable speed drives; current, speed, and position controllers; induction machine variable speed drives; space vectors; permanent magnet AC and brushless DC motors; efficiency considerations and applications to alternative energy systems. **Prerequisite(s):** ECE 240

ECE 346 - Intro to Power Engineering

Course Units: 1 Fundamentals of power engineering; energy sources; transmission lines; power flow; transformers; power electronics and HVDC; distribution systems; synchronous generators; stability; economic dispatch; protection. **Prerequisite(s):** ECE 225 or ECE 222

ECE 347 - Image Processing

Course Units: 1.0 The course covers the basic operations performed on digital images. These include digitization, image enhancement and restoration, color image processing, and image compression using the discrete cosine transform and wavelets. **Prerequisite(s):** ECE 241 or BME 241 **ISP:** FLM

ECE 350 - Communication Systems

Course Units: 1.0 Frequency domain analysis, signal space representations, and their application to wireless communications; quality measures; performance in the presence of noise. Includes a weekly lab. **Prerequisite(s):** ECE 241 **Corequisite(s):** ECE 350L

ECE 351 - Probability and Digital Communications

Course Units: 1.0 An introduction to probability with an emphasis on applications in digital communications. Digital signaling, coding, probability of error, matched filters, optimum receiver design, source entropy, channel capacity. **Prerequisite(s):** ECE 118, ECE 240

ECE 354 - VLSI System Design

Course Units: 1.0 Design of very large-scale integrated systems including standard CMOS and more advanced and emerging technologies in nanoelectronics. Design from logic to physical levels and manufacturing processes. System-on-chip technologies and applications. **Cross-Listed:** CSC 354 **Prerequisite(s):** ECE 118 and (ECE 225 or BME 225 or ECE 222) **Corequisite(s):** ECE 354L **Lecture/Lab Hours** Weekly lab

ECE 363 - Analysis and Design of Electronic Circuits

Course Units: 1.0 Multiple-stage amplifiers; Differential amplifiers; Frequency response of amplifiers; Feedback amplifier; Stability of electronic circuits; Analysis and design of operational amplifiers. **Prerequisite(s):** ECE 248 **Corequisite(s):** ECE 363L **Lecture/Lab Hours** Weekly lab

ECE 366 - Control Systems

Course Units: 1.0 Modeling of control systems by block diagrams and flow graphs. Analysis of control systems response, error and stability, Root-Locus method, and frequency domain methods (Nyquist, Bode, and Nichols). **Prerequisite(s):** ECE 240 **Corequisite(s):** ECE 366L **Lecture/Lab Hours** One lab per week.

ECE 371 - High Resolution Radar

Course Units: 1.0 An introduction to the basic theory for design and analysis of radar systems; range equation; signal design and models; signal processing; high resolution imaging; range and Doppler information **Prerequisite(s):** ECE 241

ECE 375 - Chaotic Signals and Systems

Course Units: 1 Introducing the fundamental concepts and definitions of one-dimensional and two-dimensional maps, characterization of chaotic systems, strange attractors and fractals, bifurcation analysis, circuit implementation, and chaos synchronization. **Prerequisite(s):** ECE 241

ECE 386 - Biomedical Instrumentation

Course Units: 1.0 Introduction to the theory and application of instruments in medicine. Measurements of the major systems in the body are covered. A weekly laboratory provides an opportunity to perform measurements and use biomedical instruments. **Cross-Listed:** BME 386 **Prerequisite(s):** ECE 240 or BME 240 **Corequisite(s):** ECE 386L

ECE 420 - Introduction to State Space Analysis and Control

Course Units: 1.0 Formulations of state equations. State space representation of linear systems. Dynamic characteristics of linear systems. Eigenvalues and eigenvectors. Solution of state equations. Controllability and Observability. Pole placement. Linear observers. **Prerequisite(s):** ECE 366

ECE 463 - Fundamentals of Wireless Electronics

Course Units: 1.0 Review of phasor analysis; inductance and coupling networks; resonance; complex power and power transfer; transmission line theory and applications; introduction to matching network design. Includes a weekly studio/lab session. **Prerequisite(s):** ECE 241 **Corequisite(s):** ECE 463L

ECE 481 - Special Topics in Electrical and Computer Engineering

Course Units: 1.0 Topics chosen from the current literature according to faculty and student interest. Each of these special topics courses has variable content addressing specific current areas of interest to students. They will be offered whenever the need arises.

ECE 482 - Special Topics in Electrical and Computer Engineering

Course Units: 1.0 Topics chosen from the current literature according to faculty and student interest. Each of these special topics courses has variable content addressing specific current areas of interest to students. They will be offered whenever the need arises.

ECE 483 - Special Topics in Electrical and Computer Engineering

Course Units: 1.0 Topics chosen from the current literature according to faculty and student interest. Each of these special topics courses has variable content addressing specific current areas of interest to students. They will be offered whenever the need arises.

ECE 487 - Medical Imaging Systems

Course Units: 1.0 The basic physics, instrumentation, system design, and image reconstruction algorithms are covered for the following imaging modalities: ultrasound, radiography, x-ray computed tomography (CT), magnetic resonance imaging (MRI), planar scintigraphy, and positron emission tomography (PET). **Cross-Listed:** BME 487 **Prerequisite(s):** ECE 241

ECE 490 - Electrical and Computer Engineering Independent Study 1

Course Units: 1.0

ECE 491 - Electrical and Computer Engineering Independent Study 2

Course Units: 1.0

ECE 492 - Electrical and Computer Engineering Independent Study 3

Course Units: 1.0

ECE 493 - Electrical and Computer Engineering Independent Study 4

Course Units: 1.0

ECE 494 - Electrical and Computer Engineering Independent Study 5

Course Units: 1.0

ECE 495 - Electrical and Computer Engineering Independent Study 6

Course Units: 1.0

ECE 496 - Electrical and Computer Engineering Independent Study 7

Course Units: 1.0

ECE 497 - Electrical and Computer Engineering Capstone Design Project 1

Course Units: 0.5 Topics in the seminar include professional and ethical responsibilities; the historical and societal context of electrical and computer engineering; contemporary issues, and the specification, analysis, design, implementation, and testing phases of a design project. Research papers, project reports, and oral presentations are required.

ECE 498 - Electrical and Computer Engineering Capstone Design Project 2

Course Units: 0.5 The second term of the capstone design project. Students complete the design and begin the implementation of a system under the supervision of one or more faculty members. An oral presentation and design report are required. **CC:** WAC, WAC-R

ECE 499 - Electrical and Computer Engineering Capstone Design Project 3

Course Units: 1.0 Students complete the implementation, testing, and evaluation of a system under the supervision of one or more faculty members. A final presentation and design report are required. **CC:** WS

Economics

ECO 101 - Introduction to Economics

Course Units: 1.0 Basic microeconomic model of price determination; impact of market structure on price and output decisions by firms; role of the public sector in an economy; basic macroeconomic model of national income determination; impact of fiscal and monetary policies on employment levels, price stability, and economic growth; international economic relationships. **CC:** SOCS

ECO 123 - Values, Norms, and Economic Justice

Course Units: 1.0 This class considers the goals economic policy might pursue and how different theories of the good lead to particular choices about desirable or undesirable economic policies. We consider mainstream economic thinking, which has roots in utilitarianism and liberalism, and alternative ideas such as libertarianism, Austrian economics, feminist, communitarian, and religious philosophy and economics. We apply these ideas to relevant policy issues, such as free trade, globalization, unemployment, income distribution, affirmative action, care of the environment, health care, and famine relief. **Cross-Listed:** PHL 123 **CC:** HUM, SOCS, JSPE **ISP:** LAW

ECO 134 - Data Visualization

Course Units: 1.0 The digital world we live in generates vast amounts of data. This data has the potential to help us understand the world and make better decisions. This course is about representing data using the visual domain. We learn how to turn gigabytes of numbers into pictures and interactive displays. We will use the visual domain not only for communicating insights but also as a means of analysis. We will learn about data structures (how to connect to data), data aggregation (how to summarize data), and principles of design (how humans consume visual content). We will apply these concepts to business and economic data, including sales, financial performance, pricing, etc. The emphasis is on hands-on exercises and creation of new visualizations using data visualization software Tableau. **CC:** SOCS, JDQR **ISP:** STS

ECO 156 - Analysis of Ancient Economic Activity

Course Units: 1 This class presents an introduction to economies before economics, a study of economic activity in the Greco-Roman world. Ancient Greece and Rome have been called some of the first "global" economies; and using textual sources, archaeology, and techniques from the natural and social sciences, this class will not only look at basic elements of economic activity in the ancient world-demographics, trade, monetization, industry-but also ask critical questions about how-or if-modern economic methods can be applied to the distant past. **CC:** HUM, LCC, SOCS, GDQR, GSPE

ECO 213 - Economics and Race in the US

Course Units: 1.0 This course considers the way that race affects economic outcomes in the United States. A person's race has a great deal of influence on that person's economics status, including his or her education, employment, housing, health care, standard of living, and general prospects for life. In this course we'll see how economic forces, social and political forces, and history combine to generate the distribution of goods, services, wealth, and opportunity that we see in the United States. We'll also ask how economic policy could be used to influence these distributions and make them fairer and more just. **Prerequisite(s):** ECO 101 **CC:** LCC, JCHF, JSPE **ISP:** AFR, AMS

ECO 214 - Poverty & Development

Course Units: 1 Why are so many people so poor and what constrains them from catching up? What strategies can be effective in moving people out of poverty? The intention of this course is to explore the causes and correlates of global poverty, and discuss policies used to address it. **Prerequisite(s):** ECO 101

ECO 224 - Political Economy

Course Units: 1 This course provides students with an introduction to the field of political economy. Political economy seeks to analyze how political and economic forces interact in shaping public policy. We will take an interdisciplinary approach to understand how political economy theories can be applied in various real-world cases from both economic and political perspectives. Topics include the theory of institutions, market failures, externalities, public goods, industrial policy, international trade, market structure and the economics of antitrust law. **Prerequisite(s):** ECO 101 **CC:** SOCS, GSPE

ECO 225 - Economics of Sin

Course Units: 1.0 Uses the tools of economic analysis to examine the markets for goods and services the sale of which is subject to public condemnation. Considers the impact and unintended consequences of economic policies toward these goods on market and social outcomes. Topics include the economics of transplantable organs, crime, addiction, intoxicants, marriage and sex. **Prerequisite(s):** ECO 101 **CC:** SOCS **ISP:** AMS, GSW

ECO 226 - Financial Markets

Course Units: 1.0 Study of the historical evolution, economic functions, and efficiency of financial institutions and markets, with an emphasis on the United States. **Prerequisite(s):** ECO 101 **CC:** SOCS, WAC **ISP:** AMS

ECO 227 - Financial Mathematics

Course Units: 1 This course covers the fundamentals of financial mathematics. We will apply mathematical concepts to calculating present and accumulated values for various streams of cash flows. We will learn the terminology associated with these calculations including simple and compound interest, discount, and force of interest. We will examine various financial instruments including annuities, loans, bonds, stocks and interest rate swaps, and how these instruments can be used to solve various needs. The focus of the class is on being able to solve problems and perform relevant calculations. **Prerequisite(s):** ECO 101 and MTH 112 or MTH 112P or MTH 113 . **CC:** SOCS

ECO 228 - Environmental and Natural Resource Economics

Course Units: 1.0 Economic causes of environmental degradation and natural resource depletion; benefit-cost analyses of public policies for environmental protection and natural resource preservation; specific issues in energy and wilderness resource management, air and water pollution abatement, and solid waste management. **Prerequisite(s):** ECO 101 or permission of instructor. **CC:** SOCS **ISP:** STS, ENS

ECO 229 - Introduction to Behavioral Economics

Course Units: 1.0 Human behavior often departs from standard economic reasoning in predictable ways. This course is an introduction to the field of behavioral economics - the endeavor to enrich standard economic theory by incorporating psychological insights into human behavior. In this course you will study how behavioral economists explain a range of psychological and social phenomena and how those explanations differ from standard economic ones. In particular, you will study the various ways in which (apparent) irrationality influences people's judgement and decision-making. Behavioral economics is invaluable to anyone with an interest in human behavior. It is particularly relevant to those with an interest in economics, management, marketing, public policy and the psychology of judgement and decision-making. **Prerequisite(s):** ECO 101 **CC:** SOCS

ECO 231 - Urban Redevelopment

Course Units: 1.0 An examination of why the economic fortunes of cities rise and fall and what can be done to redevelop urban areas and improve their long-term vitality. Varied perspectives are considered and recent revitalization efforts in Schenectady, Saratoga Springs, and the Capital Region are analyzed. **Prerequisite(s):** ECO 101 **CC:** SOCS, WAC **ISP:** AMS

ECO 235 - Chinese Economy

Course Units: 1.0 This course introduces the workings of the Chinese economy since its economic reform in 1978. It is about the transformation of China's economy into a market economy with its special characteristics. It covers historical and institutional background, economic growth, economic fluctuations, macroeconomic policies, banking and financial markets, foreign trade, and foreign investment **Prerequisite(s):** ECO 101 **CC:** SOCS **ISP:** AIS

ECO 238 - Women, Technology and Globalization

Course Units: 1.0 We explore the effects of technology and globalization on women's economic outcomes. Does increased trade improve the working conditions of women? Why are women underrepresented in high-tech industries?

To what extent do women find the opportunity to get involved in the knowledge-creation economy? What is the role of technology in determining the gender wage gap? **Prerequisite(s):** ECO 101 **CC:** SOCS **ISP:** GSW

ECO 241 - Microeconomic Analysis

Course Units: 1.0 **(TBD: Staff)** Theory of consumer choice; principles of production and analysis of cost phenomena; pricing and output decisions in competitive and noncompetitive markets; theory of distribution; general equilibrium analysis; introduction to welfare economics. **Prerequisite(s):** ECO 101 and, MTH 105 , MTH 110 or MTH 113 **Prereq/Corequisite(s):** A minimum grade of C in ECO-241 is required to register for ECO 498 **CC:** SOCS

ECO 242 - Macroeconomic Theory and Policy

Course Units: 1.0 Aggregate demand theory. Foundations of aggregate consumption, investment, money demand and money supply. Aggregate supply theory. Keynesian, monetarist, and rational expectations models. Economic growth theory. Unemployment, inflation and stabilization policy. **Prerequisite(s):** ECO 101 and, MTH 105 , MTH 110 , or MTH 113 **Prereq/Corequisite(s):** A minimum grade of C in ECO-242 is required to register for ECO 498 **CC:** SOCS

ECO 243 - Introduction to Econometrics

Course Units: 1.0 Descriptive statistics, probability, random variables and their distributions, sampling, statistical inference including confidence interval estimation, hypothesis testing, and regression analysis. Introduction to economic research using statistical methods to test theories. **Prerequisite(s):** ECO 101 **Prereq/Corequisite(s):** A minimum grade of C in ECO-243 is required to register for ECO 498 **CC:** SOCS **ISP:** ENS

ECO 290 - Economics Independent Study 1

Course Units: 1.0 For projects which do not require use of the material from ECO 241 , ECO 242 , ECO 243

ECO 291 - Economics Independent Study 2

Course Units: 1.0 For projects which do not require use of the material from ECO 241 , ECO 242 , ECO 243

ECO 292 - Economics Independent Study 3

Course Units: 1.0 For projects which do not require use of the material from ECO 241 , ECO 242 , ECO 243

ECO 293 - Economics Independent Study 4

Course Units: 1.0 For projects which do not require use of the material from ECO 241 , ECO 242 , ECO 243

ECO 295H - Economics Honors Independent Project 1

Course Units: 0.0

ECO 296H - Economics Honors Independent Project 2

Course Units: 1.0

ECO 320 - Seminar: P.E. of Dev in Asia

Course Units: 1 This course examines different analytical approaches to identify the critical determinants of economic development and evaluate the impacts of governments' policy choices through case studies on Asian countries and broader discussions that span other regions. We will cover major themes of development including industrialization, innovation, trade, microfinance, state-owned enterprise reforms and the politics of the Covid-19 pandemic with a focus on their political economy aspects. In the meantime, you will learn various quantitative research methods and improve your research skills through a major individual research project. **Prerequisite(s):** ECO 241 and ECO 243 **CC:** SOCS, WAC-R **ISP:** AIS

ECO 332 - Economics of Technological Change

Course Units: 1.0 The course will cover both macro and micro aspects of technological change. Topics include: Exogenous growth models, innovation-driven Schumpeterian growth models, creative destruction and the economy, competition and market structure, valuation of Research and Development (R&D) and patents, patent litigation and enforcement of Intellectual Property Rights (IPRs), innovation, technology diffusion in the global economy, and design of IPR regimes and R&D policies. **Prerequisite(s):** ECO 241 or ECO 242 **CC:** SOCS **ISP:** STS

ECO 334 - Introduction to Financial Analysis

Course Units: 1.0 Fundamental concepts of finance (time value of money, risk, and rates of return); analysis of financial statements; bond and stock valuation; capital budgeting; cost of capital, leverage, and optimal capital structure; long-term debt management; dividend policy; mergers and acquisitions; case study of the performance of an enterprise which seeks to maximize shareholder wealth. **Prerequisite(s):** At least one of ECO 241 , ECO 242 , or ECO 243 **CC:** SOCS

ECO 335 - Economics of Health

Course Units: 1.0 Examination of demand and supply for medical personnel; analysis of hospital cost, inflation, and health insurance. Discussion of issues in cost benefit analysis of public health and regulation of health care markets. **Prerequisite(s):** ECO 241 and ECO 243 , or permission of the instructor. **CC:** SOCS **ISP:** STS

ECO 338 - Quantitative Methods in Economics

Course Units: 1.0 Application of mathematical models in economics. The use of matrix algebra, dynamic analysis, and optimization techniques in economic model building. Topics covered include theories of the consumer and of the firm, economic growth, international trade and finance, optimal timing, linear programming, and macroeconomic models. **Prerequisite(s):** ECO 241 **CC:** SOCS

ECO 339 - Public Finance

Course Units: 1.0 Analysis of public sector expenditure and tax policy; efficiency and equity consequences of government spending and taxation; the nature of the public sector in the U.S., especially Social Security, education and the personal income tax; intergovernmental fiscal relationships. **Prerequisite(s):** ECO 241 **CC:** SOCS **ISP:** AMS

ECO 341 - Current Topics in Microeconomics

Course Units: 1.0 A variety of microeconomic models and their applications to economic problems. Topics selected from year to year, possible topics include game theory, general equilibrium models, time and uncertainty, information economics, structure and behavior of firms, and public choice. **Prerequisite(s):** ECO 241 **CC:** SOCS

ECO 344 - Economics of Education

Course Units: 1.0 The economics of the education industry and education policy, and the relationship between education and economic performance. Topics include human capital investment, the production of education, the returns to education, financing education (using public or private resources), and school choice and education outcomes (student achievement, completion rates, lifetime achievement). **Prerequisite(s):** ECO 241 and ECO 243 **CC:** SOCS **ISP:** AMS

ECO 350 - Seminar in Experimental Economics

Course Units: 1.0 This course provides an introduction to experimental methods in economics. Economic theories previously studied will be tested and either confirmed or evidence will be discovered that the theories are incorrect. Those found to be incorrect are usually based on questionable assumptions. Students will also become familiar with state-of-the- art research methodology in experimental economics, and will participate in and conduct experiments in bargaining, auction markets, and other economic situations. **Prerequisite(s):** ECO 241 and ECO 243 **CC:** SOCS, WAC-R

ECO 352 - Seminar: Contemporary Problems in Macroeconomics

Course Units: 1.0 **(TBD: Staff)** A detailed analysis of some fundamental macroeconomic issues: growth and productivity, the roots and consequences of the global financial crisis of 2008, the COVID pandemic, and their implications. We will also analyze current monetary and fiscal policies. **Prerequisite(s):** ECO 241 ,ECO 242 ,and ECO 243 **CC:** SOCS, WAC-R

ECO 353 - Seminar in Econometrics

Course Units: 1.0 Application of econometric methods to economic problems, plus additional topics in econometrics selected from multicollinearity, serially correlated and heteroskedastic disturbance terms, systems of simultaneous equations, seasonal adjustment, distributed lag models, other time series topics. **Prerequisite(s):** ECO 241 or ECO 242 and ECO 243 **CC:** SOCS, WAC-R

ECO 354 - International Economics

Course Units: 1.0 Foreign trade and international finance, protectionism, international migration of capital and labor, political economy of trade policy, strategic trade policy, industrial policy, geo-economic and geopolitical issues. **Prerequisite(s):** ECO 241 , ECO 242 , and ECO 243 **CC:** LCC, SOCS **ISP:** AIS, REE

ECO 355 - Monetary Economics

Course Units: 1.0 What money has been and is, with study of relevant institutions, including the Federal Reserve and its policies; the bond market and interest rates; asset demand for domestic and foreign currencies; and monetarist, Keynesian, and Modern Monetary Theory (MMT) approaches to the role of money in macroeconomics. **Prerequisite(s):** ECO 241 , ECO 242 , and ECO 243 ; ECO 241 may be taken concurrently. **CC:** SOCS **ISP:** AMS

ECO 356 - Seminar in Health Economics

Course Units: 1.0 Designed to help students learn how to do research in the field of health economics. Students will conduct economic analysis on current health-related issues of public concern, ranging from rising health care cost to the prevalence of childhood obesity. Topics may include health care expenditures, Medicaid and Medicare, U.S.

healthcare system, risky health behaviors, and healthcare reforms. **Prerequisite(s):** ECO 241 and ECO 243 **CC:** SOCS, WAC-R

ECO 357 - Seminar in Open Economy Macroeconoics

Course Units: 1 This course combines open economy macro theory with a variety of topics involving exchange rate, monetary and fiscal policy. Should countries choose fixed or floating exchange rates? What problems are created by capital inflows and their reversals? Are persistent current account deficits the sign of a misaligned real exchange rate? What is need for an independent central bank, and why have so many countries adopted inflation targeting? What are the problems with dollarization? This course deals with the policy challenges faced by developing and emerging market economies. **Prerequisite(s):** ECO 241 , ECO 242 and ECO 243 **CC:** SOCS, WAC-R, GDQR

ECO 364 - Business Analytics

Course Units: 1.0 This course is about creating business insights from big data. The learning objective is to develop three abilities. The first is the ability to manipulate big data. This includes downloading, merging, appending and reshaping data, and creating new variables. Second is the ability to analyze data. This includes exploratory data analysis, visualization, and sophisticated predictive algorithms including nearest neighbor, naive Bayes, decision trees, regression and others. We will pay special attention to validating our predictions using the train and test regimen. Finally, students will develop an ability to formulate questions that can be answered using big data, and lead to better business performance. This includes using data to improve marketing, pricing, investing capital, customer satisfaction, costs, etc. The data manipulation and analysis will be implemented by writing programs in statistical software. **Prerequisite(s):** ECO 243 (or STA 264) **CC:** SOCS

ECO 371 - Seminar: Economic Development & Public Policy

Course Units: 1 The course will introduce students to the main concepts in development economics, such as modern growth theories and their relevance for low-income countries, and major topics in policy and research within the field. In the first part of the course, we will concentrate on the development facts, the main explanations highlighted in the field of economics for differences in growth and income levels between rich and poor countries, the concept and measurement of poverty as well as differing techniques for econometric analysis like difference-in-differences, instrumental variable regression, and regression discontinuity. In the second part of the course we will study microeconomic fundamentals of economic development. We will concentrate on topics such as fertility, nutrition and health, education, labor markets, intra-household allocation of resources infrastructure, credit and savings, the future of economic development policy, and the relation among them. Empirical evidence from developing economies will be employed extensively paying special attention to the methods used. **Prerequisite(s):** ECO 241 and ECO 243 **CC:** SOCS, WAC-R

ECO 373 - Seminar in Environmental Economics

Course Units: Environmental Economics looks at how economic activity and policy affect the environment in which we live. This course provides a conceptual framework and presents empirical techniques for understanding some current environmental problems related to pollution, natural resource use and misuse, green policy implementation, green attitudes and consumerism, among other sustainability issues. The major objectives of this class are: (1) to enhance the student's ability to conduct professional economic research and to develop and present professional proposals, papers, and presentations; and (2) to increase the student's ability to analyze environmental problems and policies through a deeper understanding of economic behavior and incentives; economic institutions, property rights and contracts. **Prerequisite(s):** ECO 241 and ECO 243 **CC:** WAC-R

ECO 374 - Sports Economics

Course Units: 1.0 The application of economics to issues in sports. Sports topics include player salaries, free agency, discrimination, gambling, the Olympics, the Super Bowl, and the impact of stadiums on local economies. **Prerequisite(s):** ECO 241 and ECO 243 **CC:** SOCS **ISP:** AMS

ECO 376 - Seminar in Global Economic Issues

Course Units: 1.0 This seminar explores different perspectives on current global economic issues. A review of the recent debate on globalization provides a framework for discussion of a variety of issues related to international trade and the international financial system. Topics covered may include: international trade and the environment, international trade and labor standards, regionalism vs. world trade, international financial crises, reforming the global financial architecture, and international capital flows and developing countries. **Prerequisite(s):** ECO 241 , ECO 242 and ECO 243 **CC:** SOCS, WAC-R **ISP:** AIS, LAS, REE

ECO 378 - Labor Economics

Course Units: 1.0 Determinants of wages and terms of employment, wage and employment theories and the impact of unions, wage structures, unemployment, poverty, wage legislation. **Prerequisite(s):** ECO 241 **CC:** SOCS

ECO 380 - Seminar in Economic Growth and Development

Course Units: 1.0 Reviews the empirical record on economic growth and the resulting division of the world into rich and poor countries; considers the role of accumulation, innovation and institutions in the theory and experience of economic growth; investigates selected topics in the economics and political economy of growth, potentially including international trade, income inequality, international aid, democracy, social conflict, and corruption. **Prerequisite(s):** ECO 241 , ECO 242 and ECO 243 **CC:** SOCS, WAC-R

ECO 381 - Seminar in Economics of Culture

Course Units: 1.0 Students will read and discuss the emerging literature on the economics of culture, become familiar with commonly used sources of data on cultural values and beliefs, and address the empirical challenges of using this data to evaluate economic theories of culture. Topics will include 1) the measurement of cultural values, 2) theories of socialization, 3) religion and economic outcomes, 4) cultural beliefs, attitudes toward government redistribution and the welfare state, 5) culture as informal institutions: trade and exchange in the absence of law, management of collective goods, and informal risk-sharing arrangements, 6) family and kinship networks as economic institutions, 7) the economic role of trust, 8) trust, social capital and political institutions, 9) immigration and theories of acculturation, 10) cultural values and institutional quality. Students will conduct a significant independent research project on the economics of culture. **Prerequisite(s):** ECO 241 and ECO 243 **CC:** SOCS, WAC-R **ISP:** GSWS

ECO 382 - Seminar in Finance

Course Units: 1.0 Study of important topics in finance, such as capital structure, risk, uncertainty, and portfolio theory; agency costs; market efficiency; options theory, and the effects of financial crises on markets. **Prerequisite(s):** ECO 241 and ECO 334 **CC:** SOCS, WAC-R

ECO 383 - Seminar in International Finance

Course Units: 1.0 This course is about the financial markets that facilitate trade and investment in today's global economy. We will learn about the balance of payments, exchange rate determination and exchange rate regimes. Emphasis in the course will be placed on understanding the events currently happening around us: including the widening U.S. current account deficit, dollar depreciation against the euro, China's reluctance to float its exchange rate,

and the financial crises in Asia and Argentina. **Prerequisite(s):** ECO 241 and ECO 242 **CC:** SOCS, WAC-R **ISP:** REE

ECO 387 - Seminar in Labor

Course Units: 1.0 The objective of this course is to learn how to do empirical research in labor economics using data drawn from the Current Populations Survey (CPS). The CPS is a monthly survey of about 50,000 households conducted by the Bureau of the Census for the Bureau of Labor Statistics and is the primary source of information on the labor force characteristics of the U.S. population. Using the CPS data many economists have written papers on topics such as gender/racial wage discrimination, economic performance of immigrants, labor union, job training, involuntary job loss, computer use, poverty, health insurance, and welfare. Students will write and present an empirical paper using data drawn from the CPS. In order to process the CPS data for their research, students will learn how to write programs in statistical software Stata. This would be an excellent prep course for students interested in writing a senior thesis on any topics in labor economics or applied microeconomics and analyzing large data sets. The main labor economics topics to be covered in this course include compensating wage differentials, human capital, labor mobility, immigration, and labor market discrimination. **Prerequisite(s):** ECO 241 and ECO 243 **CC:** SOCS, WAC-R **ISP:** AMS

ECO 390 - Economics Internships

Course Units: 1.0 Designed to involve students in the operation of various economic agencies, commissions in New York State government and private firms. Interns apply skills to practical problems in economic analysis and gain exposure to the functioning of the agency or firm. **Prerequisite(s):** ECO 241 , ECO 242 , and ECO 243 **CC:** SOCS **ISP:** ENS

ECO 391 - The Income Tax: Policy and Practice

Course Units: 1.0 This course integrates theory and practice in addressing income tax policy issues. Students run a Volunteer Income Tax Assistance Site at the College's Kenney Community Center at which income tax forms are filled out for low-income tax payers. Students undergo training and pass an IRS certification test. Students participate in all aspects of running the site, including publicity, electronic filing, and site management. Class sessions are used for training and for study of the economics literature on income tax policy issues, including the Earned Income Tax Credit, policy towards subsidization of child care, tax compliance issues, and tax incentives for saving. **Prerequisite(s):** ECO 241 , ECO 243 , ECO 339 and a minimum GPA of 2.9 **CC:** SOCS

ECO 445 - Managerial Economics

Course Units: 1.0 This course is about applying economic principles and analytical techniques to a variety of business problems, including starting a business, measuring performance, evaluating investment projects, financial modeling, pricing of products, managing suppliers, marketing, and strategy. The material is taught using case studies. **Prerequisite(s):** ECO 241 and ECO 243 and senior standing. **CC:** SOCS

ECO 490 - Economics Independent Study 1

Course Units: 1.0 For projects which require one or more of the core courses ECO 241 , ECO 242 , or ECO 243 as prerequisites.

ECO 491 - Economics Independent Study 2

Course Units: 1.0 For projects which require one or more of the core courses ECO 241 , ECO 242 , or ECO 243 as prerequisites.

ECO 492 - Economics Independent Study 3

Course Units: 1.0 For projects which require one or more of the core courses ECO 241 , ECO 242 , or ECO 243 as prerequisites.

ECO 493 - Economics Independent Study 4

Course Units: 1.0 For projects which require one or more of the core courses ECO 241 , ECO 242 , or ECO 243 as prerequisites.

ECO 498 - Economics Senior Thesis 1

Course Units: 0.0 Independent research thesis. **Prerequisite(s):** A minimum grade of C in each of the courses in the core sequence of ECO 241 , ECO 242 , ECO 243 , at least one course in the area of the thesis and senior standing; ECO 498 is prerequisite to ECO 499 . **CC:** WS

ECO 499 - Economics Senior Thesis 2

Course Units: 2.0 Independent research thesis. **Prerequisite(s):** A minimum grade of C in each of the courses in the core sequence of ECO 241 , ECO 242 , ECO 243 , at least one course in the area of the thesis and senior standing; ECO 498 is prerequisite to ECO 499. **CC:** WS

English

EGL 100 - The Study of Literature: Poetry

Course Units: 1.0 Students will explore the art of poetry by examining a selection of poems from at least three cultures and by considering how poetry conveys its complex meanings through voice, image, rhythm, as well as formal and experimental structures. Particular attention will be given to developing reading and writing skills. 100-level courses are open to all students. **CC:** HUL, WAC, HUM

EGL 101 - The Study of Literature: Fiction

Course Units: 1.0 Students will explore fictional works from at least three cultures. Emphasis will be placed on exploring the art of narrative - considering the ways stories get told and the reasons for telling them. Attention may be paid to such concerns as narrative point of view, storytelling strategies and character development, the relationship between oral and written narrative traditions, and narrative theory. Particular attention will be given to developing reading and writing skills. 100-level courses are open to all students. **CC:** HUL, WAC, HUM, JLIT

EGL 102 - The Study of Literature: Dramatic Literature and Social Justice

Course Units: 1.0

In this course we will explore how plays engage audiences and readers in fundamental questions about human identity. Not only do plays acted on the stage abound in examples of characters who switch places or are mistaken for one another, they also provide a forum for individual characters to question their relationships with the people and culture that surround them. Even as plays stage the most private of feelings in a public setting, they also suggest that human interactions frequently involve playing a role. Dramatic literature puts front and center the ways in which many forms of identity-including gender and race-are socially constructed. At the same time that this course offers a wide-ranging introduction to the forms of dramatic literature, it will pay special attention to the ways in which play present

questions of social justice. Who is given and denied agency? How do plays stage and raise awareness of problems of inequity? How do plays both reinforce and critique the stereotypes connected to gender, race and mental illness.
As we explore to the different forms of identity negotiated on the stage, we will be alert to how our own diverse experiences shape our experiences as readers and audience members. We will ask how plays such as *Antigone, Much Ado about Nothing,* and *A Doll's House* reveal the constrictions of gender roles. We will explore the varied ways in which plays such as *A Raisin in the Sun, Clybourne Park, Fences,* and *Sweat* represent the racism that interferes with the full participation in the American Dream, seen in both employment and housing. And we will explore how *Water by the Spoonful* and *The Flick* represent the struggles of drug addiction, PTSD, anxiety, and depression in a diverse American Society .

100-level courses are open to all students. **Cross-Listed:** ATH 104 **CC:** HUL, WAC, HUM, JLIT

EGL 110 - The Poetic Process

Course Units: 1.0 This course will introduce students to the pleasures of poetry by way of the process of creating it. Students will read and discuss poems by a diverse range of contemporary poets, respond to writing prompts that clarify the structure of these poems while encouraging individual experimentation, and complete a final portfolio of carefully revised assignments. 100-level courses are open to all students. **CC:** HUL, WAC, HUM, JCAD, JLIT

EGL 111 - Introduction to Creative Writing

Course Units: 1

In this multi-genre creative writing course, we'll read and write poetry, fiction and/or creative nonfiction, considering everything we read from a writer's perspective, asking what we can learn from it for our own writing. We'll read work by writers from diverse identities, perspectives, and aesthetic approaches; complete many writing exercises; and develop longer drafts outside of class. Students will gain editorial skills and will regularly share their writing with the group. This introductory course is appropriate for anyone who is curious about using language as a creative medium.
100-level course are open to all students. **CC:** HUL, WAC, HUM, JCAD, JLIT

EGL 115 - Black Lives Matter Poetry

Course Units: 1

This course examines poetry that is part of the Black Lives Matter movement. We will investigate poetry as a form of protest for African Americans in the 21st Century and examine how it is used to resist white supremacy and violence against Black communities. Poet: Jericho Brown, Danez Smith, Ross Ray, Eve L. Ewing, Claudia Rakine, and more. Also, counts toward AFS, AMS.
100-level courses open to all students. **CC:** HUL, LCC, JCAD, JLIT, WAC **ISP:** AFR, AMS

EGL 116 - Poetry of People and Places

Course Units: 1

In the song "In My Life," John Lennon sings "Though I know I'll never lose affection / for people and things that went before / I know I'll often stop and think about them." The speaker sings about "people and things" that have shaped and continue to inform his identity. In this class, we will study poems that impact a person's sense of self and home. The poems we will read will explore history, family, place, race, class, gender, as well as love, sex, death, mourning, and joy, as these are the "stuff of life."
100-level courses are open to all students. **CC:** HUL, HUM, WAC, GCAD, GLIT

EGL 117 - Queer Poetry

Course Units: 1

This class will examine and interrogate poetry-its form, its content, and everything in between-with respect to queer poetic works. We will put diction, voice, rhythm, imagery, and form in conversation with social, cultural, and political issues that surround queer poetry. From single foundational poems to contemporary poetry collections, we will dive into the relationship between poetry and queer identity. This class has critical, creative, and collaborative components and you will be asked to do them all.
100-level courses are open to all students. **CC:** HUL, HUM, JCHF, JLIT, WAC **ISP:** GSW

EGL 119 - Decolonial Poetries

Course Units: 1

In this course we'll read and critically engage with contemporary poets writing predominantly in English from a decolonial perspective. From the intersection of poetics, aesthetics, decolonial (and anti-colonial) theory, and social justice in the arts, we will explore what a poetics of reading and writing decoloniality entails. By centering our exploration on poets who write from ongoing colonial experiences, we'll build an understanding of the work of poetry in decolonial imaginings. We will explore how decolonial poetic practices work against racism, colonialism, and other contemporary systems of oppression, and consider how decolonial poets respond to and engage with these systems both overtly and through their aesthetics. Students will develop an understanding of both traditional and experimental poetics, along with decolonial theories.
100-level courses opne to all students.

EGL 120 - Fictional Forms

Course Units: 1

This course introduces students to a variety of fictional forms. We consider what makes prose into literary fiction and develop an arsenal of key terms and ideas about narrative that will lay the groundwork either for further study or for lifelong learning and appreciation. Our primary sources range from oral stories to novels from around the globe to recent experiments in fiction, with particular emphasis on writers from underrepresented groups.
100-level courses are open to all students. **CC:** HUL, WAC, HUM

EGL 140 - Introduction to Digital Studies: Digitizing the Past

Course Units: 1 The digital age and the medieval period-two disparate phases of history-may at first blush appear to have nothing in common. Yet, as medieval scholars have shown, this myth is best dispelled in and through the medieval manuscript, a physical object representing the convergence of text and technology in its earliest form. Using the medieval manuscript as a case study, this class will introduce students to digital topics such as online storytelling, digital archives and curation, online exhibits, data interpretation, and more. Along the way, students will learn skills of technical literacy, written analysis, and archival interpretation using programs such as Omeka, Artsteps, Audacity, Voyant Tools, and StoryMaps. **Cross-Listed:** SMT 140, AAH **CC:** HUL, WAC, HUM

EGL 150 - Film Form and Analysis

Course Units: 1.0 **(Spring: Troxell)** In this course we will examine elements of film form such as cinematography, sound, editing, lighting, mise-en-scene, and narrative structure. Considering film an art form, a commercial product, a psychological experience, and a social practice, we will also pay close attention to issues of genre, performance, intertextuality and authorship. 100-level courses are open to all students. **CC:** HUL, WAC, HUM

EGL 188 - Cyborgs!

Course Units: 1 Cybernetic organisms, or "cyborgs," represent the ultimate integration of biology and technology since these are organisms living with abiotic parts. This exciting new interdisciplinary course will provide an introduction to the biological and computer science concepts fundamental to the development of cyborg technology as well as critical evaluation of the consequences of introducing such technology in society. Students taking this course will not just be trained how to develop cyborg technology, but whether or not such technology should be developed for society. **Cross-Listed:** BIO 088, CSC 088 **CC:** HUL, HUM, SCLB, SET, WAC, JDQR, JETS, JLIT JNPS

EGL 190 - Confronting the Canon: Reimagining Beowulf

Course Units: 1.0 In "Reimagining *Beowulf*," we'll examine one of the oldest and most enduring works of Old English literature, *Beowulf.* Through critical analysis and discussion, students will confront *Beowulf* not only as an epic poem but also as a cultural artifact that has evolved through time, shaping and being shaped by its place in the British literary canon. Exploring the complexities of representation, we'll examine how the text explores hierarchies of identity, power, religion, class, race, and gender. Moreover, this course challenges students to critically engage with *Beowulf*, questioning conventional interpretations and seeking alternative narratives within the text. By exploring marginalized perspectives and overlooked themes, our aim will be to recuperate and amplify voices often silenced in traditional analyses of this canonical text. EGL 190 may alternatively count as a pre-1700 credit for English majors. 100-level courses are open to all students. **CC:** HUL, WAC, HUM, JLIT

EGL 191 - Confronting the Canon: The Modernist Edition

Course Units: 1

Modernism, the literary movement that dominated in the West from about 1890-1950, has been a stronghold of white male privilege, subtended by deep seated anxieties about other bodies. In this section of "Confronting the Canon," we will consider the complicated legacy of modernism and its influence on more recent literary works; the often troubling personal and political legacy of modernist writers; the relationship between the modernist canon and perpetuation of white supremacy; and the ways in which modernism, and the scholarship about it, bolster a rigid heteronormative patriarchy. "Confronting the Canon" courses are cornerstones of the new English curriculum and required beginning with majors/minors in the class of 2025.
100-level courses are open to all students. **CC:** HUL, HUM, WAC **ISP:** AFR, GSW

EGL 192 - Confronting the Canon: What is an Empire?

Course Units: 1 The study of the relationship between literature and empire has overwhelmingly focused on a small core of European empires. This class will expand understanding of the relationship between imperialism and literature by examining novels, epics, and allegories written in entangled colonial networks in which Europe is influential, but not the sole player. Readings for this class will focus on empires located on the continents of Africa and Asia broadly defined, including the Zulu, Ottoman, Russian, Japanese, and Soviet
imperial formations. **CC:** HUL, HUM, WAC, GLIT, GCHF, GSPE **ISP:** AFR, AIS, GSWS

EGL 193 - Confronting the Canon: Confronting the Hero's Journey

Course Units: 1

This course will challenge traditional renderings of various heroic tales through the double-edged lens of queer and feminist theory. Our discussions will draw from various scenes and film screenings of classic stories that may include *The Epic of Gilgamesh,* the *Bhagavad Gita,* Ovid's *Metamorphoses*, Aeschylus's trilogy *The Oresteia*, Homer's *Odyssey*, Virgil's *Aeneid*, the story of Jesus, *Beowulf*, and several fairy tales, as well as slightly more contemporary classics such as Herman Hesse's *Siddhartha, the Lord of the Rings, Star Wars, The Matrix, Harry Potter,* and *The Wizard of Oz*, among others. "Confronting the Canon" courses are cornerstones of the new English curriculum and required beginning with majors/minors in the class of 2025. Also counts toward GSW.

100-level courses are open to all students. **CC:** HUL, HUM, JCHF, JLIT, JSPE, WAC **ISP:** GSW

EGL 194 - Confronting the Canon: Confronting Dido's Many Faces

Course Units: 1 This course introduces students to some of the foundational questions raised when interrogating & reconfiguring what has long been considered the traditional, Western literary canon. English classes, in many different educational settings, have an extensive history of perpetuating the "greatness" of texts by white, heterosexual, male authors, often at the expense of those works written by women, writers of color, & queer writers, among other diverse groups. "The Many Faces of Dido" will challenge traditional interpretations of Dido, portrayed in classical works of fiction, poetry, drama, & art. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** GSWS

EGL 200 - Shakespeare to 1600

Course Units: 1.0

Shakespeare's works speak to perennial human concerns (ambition, unrequited love, the conflicts between generations), and he has even been lauded as the "inventor of the human." At the same time, his plays come from a very specific cultural milieu; he was a white man who lived in England from 1564-1616. In this course, we will explore the plays written in the first half of Shakespeare's career, collaborating to appreciate the rhetorical devices of Shakespeare's language and to understand the cultural milieu in which his plays were written. Some of the questions that we will ask include: How do structures of political and familial authority affect the characters' conceptions of their roles and duties? What possibilities do the plays offer for female empowerment? To what extent did Shakespeare's stage, which reached audiences of all classes, challenge contemporary conceptions of inherited nobility at a time of increasing social mobility?
Shakespeare's plays have at their center the question of performance; this makes them very well suited to exploring the multifaceted ways in which human identity is social constructed and socially expressed. In our readings of romantic comedies such as *A Midsummer Night's Dream* and *Much Ado About Nothing*, we will ask how both women and men are constricted by gendered expectations of honor. We will also explore the pernicious association between "fairness" and beauty in Shakespeare's time, discovering how expectations about women's supposed sexual and physical purity worked through references to offensive racial stereotypes about contamination. In our discussion of *The Merchant of Venice*, we will pay particular attention to how the privileging of upper-class, Christian men in the play and the religious othering of Shylock and Jessica contributes to a society in which injustice is hypocritically masked as mercy, and all characters suffer. Our examination of the history plays such as *Henry IV*, Part 1, will attend to the costs of creating an English national identity; in particular, we will explore how racial and gendered othering in these plays defines what it means to be English in way that privilege some and exclude others. **Cross-Listed:** ATH 256 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, WAC, HUM, JLIT

EGL 201 - Shakespeare after 1600

Course Units: 1.0 In this course we will explore plays written in the second half of Shakespeare's career. We will emphasize Shakespeare's great tragedies-works that retain their ability to astound readers and audiences today-but we'll also explore his later comedies, "problem plays," and tragicomic final works. We will collaborate to appreciate the sounds and meaning of Shakespeare's language, to think about the ways he structures plots and creates vivid characters, to understand the cultural milieu in which his plays were written, to make thematic connections across the plays, and to appreciate the plays as both literature and in performance. Shakespearean drama can be challenging to study, but the rewards are lifelong: revelry in language, a strong grounding in theatrical traditions that remain dominant in our culture, a deeper understanding of the actions and values that motivate human beings in society, and an engagement with dramatic works that continue to be reimagined worldwide. **Cross-Listed:** ATH 257 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, JCHF, JLIT, WAC

EGL 202 - Amazons, Saints and Scholars: Women's Writing in the Middle Ages and Renaissance

Course Units: 1.0 This course explores the medieval and early modern female writers of England and France. We will ask: how did women respond in writing to the male-defined literary traditions and conventions of these eras? The course also provides an introduction to some of the major questions and works of feminist literary criticism, including: Why should we read the works of women? What aesthetic standards should we apply when discussing their works? Is there a difference between "masculine" and "feminine" writing? We will focus on six female writers: Marie de France, Christine de Pizan, Elizabeth Carey, Isabella Whitney, Amelia Lanyer, and Mary Sidney. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 203 - The Age of Heroes

Course Units: 1.0 In 410 the Romans abandoned Britain, withdrawing to the continent just as pagan Germanic raiders began to challenge the island's native Picts and Celts. In 1066 the Duke of Normandy crossed the Channel and kicked a Danish king off the throne of a fully Christianized England. In between these two events lies the matter of this course: the subtle and sophisticated literature, art, and culture of early medieval England. We will explore its evolution and wrestle with thorny questions about the significance and meaning it has been accorded over the centuries. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 204 - Plague, Revolt, Religion, and Nation: The Fourteenth Century

Course Units: 1.0 This course explores English literature as it reflects, shapes, and critiques society from the onset of the Hundred Years' War to the overthrow of Richard II (1337- 1400), a turbulent period that includes the Peasants' Revolt, the Black Plague, the rise of English as the language of literature and government, and the proto-Protestant movement known as Lollardy. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 205 - The Road to Canterbury

Course Units: 1.0 This class will focus on Geoffrey Chaucer's seminal work, *The Canterbury Tales*, as a way to introduce the language, culture, and literature of fourteenth-century England. We'll read selections of the Tales, learning the rudiments of written and spoken Middle English along the way. In addition, students will explore the following topics in relation to Chaucer's work: narrative and story-telling, literary authority, social and class status, gender, racial, religious, and sexual difference, cultural memory, and more. 100-level courses are open to all students. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 206 - Gender in Renaissance Literature

Course Units: 1.0 This course explores English Renaissance texts from a variety of genres with an eye to the gender norms that they both created and critiqued. On the one hand, the early modern period offered very distinct roles for men and women. Men were expected to abide by a code of honor that emphasized bravery and action, while women were expected to be chaste, silent, and obedient. On the other hand, there were countless examples of these norms being challenged. Reading plays, poems, speeches, and conduct manuals, we will consider the complexity of their presentations of gender. **Prerequisite(s):** Any 100 level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT **ISP:** GSWS

EGL 207 - White Columns, White Narratives: Archi[text]ure and Race in the Middle Ages

Course Units: This course will examine the relationship between race, architecture, and literary production in the late medieval period (1000-1500). Students will be introduced to premodern critical race studies (PCRS) through the work of scholars who necessarily examine processes of racialization, architectural practice, and literary production in the medieval period. As a class, we'll use PCRS methods to interrogate medieval archi[text]ural narratives for the ways in which they participate in race-craft. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT, JCHF

EGL 208 - Renaissance Drama

Course Units: 1.0 Shakespeare and Marlowe were the Beatles-Stones, Red Sox-Yankees, everybody else-Kanye of their day: moral opposites and aesthetic rivals, but also mutual inspirations and at times even collaborators. Marlowe was the dynamic bad boy, drawn to dark characters mirroring his own troubled soul; Shakespeare, the reclusive genius, who worked in more subtle ways to delineate human behavior and challenge existing power structures. We'll see how they together created one of the world's most dynamic literary forms, modern English drama, and how that drama, along with the drama of their rivalry, continues to inform our own ideas about art and its cultural power. **Cross-Listed:** ATH **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 210 - British Literature: Seventeenth-Century Literature

Course Units: 1.0 This course will look at seventeenth-century literature and culture through the idea of revenge, which became a dominant form in an age of turmoil, injury, and change. We will begin with the early revenge plays of Shakespeare, Tourneur, Marston, Ford, and Webster, proceed through the cosmic revenge of Satan in *Paradise Lost*, and end with the ironic revenge exacted on moral goodness by the Restoration poets, playwrights, and philosophers. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 211 - Milton

Course Units: 1.0 The two sides of Milton - the high humanist poet, author of the greatest epic in English and one of the greatest religious poems in any language, and the Puritan revolutionary, defender of regicide and champion of the English commonwealth. The goal of the course will be to see if the two sides can be held separate, or if they must be seen as complementary. We will read Paradise Lost at the rate of one book per week, always trying to relate the two sides of the poet. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** REL

EGL 212 - The Restoration

Course Units: 1.0 This course will closely examine the culture that produced both the first official poet laureate of England, John Dryden, and the most notoriously libertine poet in English, the Earl of Rochester. Also appearing will be the first English woman to make a living from literature, Aphra Behn; the wittiest playwrights in English dramatic history (Wycherley, Etherege, Congreve); John Milton; some very early English novels; and some pretty good philosophers, including Thomas Hobbes, John Locke, and maybe even Sir Isaac Newton. All that and the Great Fire of London, outbreaks of the plague, several wars, and major revolutions in politics and science. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 213 - Circum-Atlantic Revolutions

Course Units: 1.0 This course will draw on literary and historical writings and artwork that emerged before, during, and after the three revolutions that ravaged the circum-Atlantic world between 1765 and 1804. We will consider interconnected events leading up to each conflict and the consequences of war on racial, ethnic, gendered, and indigenous groups. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF,JLIT, JSPE **ISP:** AFR, AMS, GSWS

EGL 217 - Enlightenment and Romanticism

Course Units: 1.0 Consideration of the relationships between two major currents in modern European thought and culture: Enlightenment and Romanticism. Authors will range from Descartes to Nietzsche and may include Voltaire, Rousseau, Goethe, and Kant. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 220 - The Romantic Revolution

Course Units: 1.0 The Romantic period was one of Britain's most "revolutionary" eras in a number of important ways. For England, the age was marked by dramatic social, political, literary, and scientific upheaval and change. In this course we will investigate the various causes that were envisioned, promoted, and enacted during this era and trace their often wide-ranging and revolutionary effects. Readings will likely include selections from the following authors: William Wordsworth, Samuel Taylor Coleridge, William Blake, Mary Shelley, Lord Byron, Percy Bysshe Shelley, and John Keats. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, JCHF, JLIT, WAC

EGL 222 - Gendered Ecologies in the Long-Nineteenth Century

Course Units: This course will challenge gendered judgments and standardized principles represented in the masculinized canon of nineteenth-century nature writing and establishes a framework for women writers of the long nineteenth century, who were active contributors to the discourse of natural history. These women writers engaged in critical observations of eco-materiality, analyzed their findings, and encrypted their discoveries of nature in their literary creations. Our course readings will focus on the works of several prominent, trans-Atlantic literary women from the long-nineteenth century whose multi-directional observations of animate and inanimate objects in the environmental sphere are founded on personal discoveries made while interacting with their surroundings. The aim of this course is to reconsider the place of women as naturalist writers and to foreground the salient contributions of literary women writers to the study of eco-feminism, botany, political ecology, and bio-communal systems. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, ENS, GSWS

EGL 223 - Jane Austen

Course Units: 1.0 Jane Austen has achieved what few other literary authors can boast: membership in "the canon" of "great authors" and an intensely devoted, energetic modern fan base complete with cosplay, fan fiction, pilgrimages, and a never-ending series of visual adaptations. Students will read Jane Austen's work in chronological order, explore some late 18th and early 19th century contexts (biographical, philosophical, literary, cultural, historical), become familiar with some of the central, current, and ongoing scholarly debates about Austen, and discuss the value of, and consider the insights revealed by, some modern adaptations of Austen's work. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 224 - 19th-Century Novel

Course Units: 1.0 This course on the 19th-century novel is an experiment in slow reading. According to David Mikics, "Reading better means reading more slowly. There is a quiet movement afoot on behalf of slowness: slow cooking, slow thinking, and yes, slow reading. In reaction against the breathless pace of our computer-driven world, writers on social trends have begun to extol the virtues of a more meditative, involved approach to many parts of our lives, and reading is no exception" (1). Together, we will spend the term slowly reading and rereading one substantial Victorian novel, focusing on slow reading as both experience and methodology. In addition to the novel, we will read around it: digging into primary and secondary source material to build a complete portrait of the novel itself, the cultural landscape that surrounded it, and its critical and artistic legacy. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 230 - Seduction in Early American Republic

Course Units: 1.0 In her seminal study, *Revolution and the Word*: *The Rise of the Novel in America*, Cathy N. Davidson argues that "literature is not simply words upon a page but a complex social, political, and material process of cultural production" (viii). The eighteenth-century sentimental novel serves to highlight a moment in history lodged among judgments, anxieties and controversies about the direction the newly-formed American Republic would take at the end of the Revolution. Embedded within these narratives are questions about both men's and women's power and authority in the public and private spheres, the negation of the female self, the seductive function of romance and courtship, and the perception of women's bodies as moral, social, and biologic commodities. This course seeks to explore disjunctions between the sentimental structure of the early American novel and its contradictory attitudes toward liberty and self-expression. Through the lens of queer theory, affect theory, and new materialism, students will examine how seduction, homoerotica, and cross-dressing both reinforce and subvert American values and ideals that are distinct from European standards of morality. The readings will also consider how the cult of "true womanhood," prominent during the first few decades of the nineteenth century, suppressed pleas for women's equality. How do the texts under consideration help to define the new nation, its citizens, and boundaries? In what ways do these texts consolidate nationhood through the formation of a national literature and the narrative structure of a national history, culture, and consciousness? Do these novels construct, conserve, or undermine American cultural institutions? **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, GSWS

EGL 231 - Nineteenth-Century American Literature

Course Units: 1.0 This course focuses on the self-conscious development of literary tradition in 19th century America -- its meaning, its implications, its failures -- and its aesthetic and moral possibilities. Writers under consideration may include Emerson, Fuller, Thoreau, Douglass, Hawthorne, Melville, Dickinson, and Twain, and topics will include individualism, transcendentalism, abolition, the coming of war, the aftermath of war, growth, expansion, and power. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 233 - 18-19th Century Early Literature of African Diaspora

Course Units: 1.0 This introductory survey course will trace African American movement towards literary and aesthetic mastery beginning with what Henry Louis Gates calls "oral writing." Readings begin with the first known written poems and progress from slave narratives and autobiography to essays and fiction. Authors include Phillis Wheatley, Harriet Jacobs, Frances Ellen Watkins Harper, Solomon Northup, Charles Chesnutt, W.E.B. Du Bois, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AFR, AMS, GSWS

EGL 236 - Trans-Atlantic Realism and Naturalism

Course Units: 1.0 Realism and naturalism were aesthetic movements that emerged in American fiction between approximately 1865 and 1925. This course examines these two literary movements to show how writers of this era

explored the trauma created by war (the Civil War and WWI), the moral consequences of freedom and sexual awareness, rapid urbanization and the Great Northern migration, inconsistencies between wealth and poverty, and innovative discoveries in science and technology. The purpose of this course, then, is to investigate how the authors of this period practiced their art both collectively and individually and the ways in which American social life informed the ideologies of realism and naturalism. Possible writers we will study include William Dean Howells, Stephen Crane, Frank Norris, Theodore Dreiser, Kate Chopin, Mary Wilkins Freeman, Mark Twain, Edith Wharton, Henry James, and Paul Laurence Dunbar. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, GSW

EGL 237 - Reclamation & Renaissance: Black Literary Arts 1900 to 1960, "Dark Like Me - That is my Dream!"

Course Units: 1.0 In this course we will read literatures of African diaspora from the United States and from the English-speaking African Diaspora more broadly speaking, written in the early to mid- 20th century. This course is deliberately using the adjective Black instead of African American to highlight our awareness that the literature of the early 20th century is part of a Pan-African movement. Threads we will follow include: issues of identity (being American; being Black; racial and social passing); miscegenation; claims to culture through literature; political and social change through literature (is it possible?); self-representation and activism through literary arts; rise of pride in being part of African diaspora; gender roles in literary and social contexts. Questions we will raise and explore in the course of the term include: What is the relationship between aesthetic production and political action? What are the gendered aspects of the expressions of the writers and artists? How are "folk" forms incorporated into "literary" forms? How does self-representation operate in the reclamation of a sense of self? We will engage with the complexities of cultural diversities within the African diaspora while we contemplate the traditions we follow. We will begin, as the title of the course suggests, around the turn of the 20th century, when Du Bois writes that the "problem of the twentieth century is the problem of the color line" (Souls of Black Folk 45). We will move through what some called the Harlem Renaissance, during which time writers such as Langston Hughes celebrated being Black in a reclamation of the self: "Dark like me-That is my dream!" (Selected Poems 14). We will explore the literature of the pre- and post- WWII era, ending the term with what was known as the Black Arts Movement. The goal, in terms of content, is to provide you with a broad sampling of literature of the African Diaspora literature of the early 20th century, with a particular focus on literature (prose in the form of essays, short stories, novels; poetry; plays) generated from the United States while also reaching toward its more global pan-Africanist roots. I hope you will follow your interests and curiosities, after the course is over, to explore this literature further. (Also counts for Africana and American Studies). **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JLIT **ISP:** AFR, AMS

EGL 242 - Experimental Writing Workshop

Course Units: 1 Experimental writing explores language as a medium in unexpected and often surprising ways. This course will focus primarily on poetry, though poetry defined somewhat broadly, including mixed media, visual, and prose poetry. We'll read a variety of experimental texts, using them as launch points for our own experimental writing practices. This generative workshop will focus on the creation of new work using experimental techniques, while learning to engage deeply in reflective reading practices with each other's work. We'll experiment with constraint, computational poetry, hybrid and mixed media poetry, and generally be open to as many processes and approaches as we can. The goals of our workshop time, and our readings, will be to encourage you to develop new modes, skills, and techniques for writing creatively. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD

EGL 243 - The Poetic Object Workshop: Experimental Book Forms

Course Units: This course will explore the intersection between poetry and visual arts as a space for literary artistic production. Through demonstration and assignments students will write poetry and create prints and objects that integrate visual and textual elements. Students will practice combiningstructure, visual, and textual content in

meaningful ways. **Cross-Listed:** AVA 353 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test or AVA 150 , or AVA 251 or AVA 252 or instructor's permission

EGL 244 - The Contemporary British Imagination

Course Units: 1.0 This course will examine contemporary British literary works. We will be reading closely, carefully, and critically about gender, sexuality, class, race, love, trauma, narrative, style, history, and more. This course will familiarize students with a sampling of the (often experimental) literature that the global Anglophone world has produced fairly recently; our selections will range from experimental short stories to books-turned-films to so-called "weird fiction," in order to address the following major questions: how does the contemporary British literary imagination develop? And, what, exactly, does it develop into? **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 245 - Experimental Texts

Course Units: 1.0 Experiments in writing have a long history and are often some combination of fascinating, weird, complex, risky, and wild. This course will cross genre-boundaries in order to discover what it means to read, write, and experience "experimental" literature, which usually attempts to challenge the traditions, formal devices, and audience expectations of literary engagement. With a focus on the relationship between form and content as well as attention paid to the limitations associated with strict categorical delineations of literary and cultural objects, we will spend the term analyzing and producing experimental texts. We will spend time considering primarily contemporary textual responses to cultural, social, and political shifts and the ways in which such shifts inform and affect our reading practices. Readings will include poetry fiction, theory, and contemporary media. Writing assignments will include interpretive and creative works. Collaborative projects will also be a part of this course. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 247 - Studies in Modern Poets: Bob Dylan and Gary Snyder

Course Units: 1.0 This course is a study in the role of history in the ways that two poets, Bob Dylan and Gary Snyder, conceive of their work. Dylan's fascination with the music and history of America from the run-up to the Civil War through Reconstruction and the Great Depression, shapes his sense of useful subject matter, his development of the personae that inhabit his lyrics, and his range of rhetoric, from the nostalgic to the prophetic; it also places him squarely within contemporary controversies about the political uses of history. Gary Snyder's understanding that history extends to the natural world and our relationship to it is integral to his complex enterprise as a writer of poems and essays, as an activist and educator, and as a point of connection in a web of similarly concerned thinkers. His conception of history as a matter of bioregions rather than of nations and of tradition as a matter of wisdom rather than of identity unsettles the usual divisions between art, politics and science as well as our conventional expectations of poetry. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD, JLIT **ISP:** AMS, REE

EGL 248 - Introduction to Black Poetry

Course Units: 1.0 We will explore the development of African-American poetic voices in North America. We will look at poems and poets as they constitute a hybrid and composite tradition. We will read poetry in anthologies; we will also read several full books by individual authors, and will listen to performance poetry on CD and DVD. A partial list of poets we will read includes Wheatley, Harper, Dunbar, Hughes, McKay, Helene Johnson, Brooks, Baraka, Clifton, Sanchez, Cortez, Morris, Mullen, Brathwaite, Komunyakaa, Francis, Dungy, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AFR, AMS

EGL 249 - Contemporary Poetry

Course Units: 1.0 In this course, we will take a close look at the work of five poets, three whose lives have spanned the American experience from the 1960s to the present (Peg Boyers, Carl Phillips, Frank Bidart) and two younger poets (Chelsea Woodard and Diane Mehta, both Union graduates). We'll take a look at the problem of the speaker in the poems (who may be the poet, more or less, or a mask, or a fiction, or some combination), which is also a way of asking questions about identity, history, and culture, as well as about freedom and restraint, the possibilities and limitations of language. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 250 - The Beats and Contemporary Culture

Course Units: 1.0 An examination of the writers of the Beat Generation (including Allen Ginsberg, Jack Kerouac, Gary Snyder, Edward Sanders) and of their lasting influence on American popular culture. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, GLIT, GCAD **ISP:** AMS, GSWS, REE

EGL 251 - World Literatures in English

Course Units: 1.0 Besides the USA, Canada, the UK and Ireland, there are dozens of countries where English is commonly spoken and written. From Australia to Zimbabwe, Belize to Nigeria, Jamaica to India, New Zealand to Kenya, literature in English is a world-wide phenomenon. In this course, students will read and analyze English-language poems, short stories, personal essays, and novels from a selection of far-flung countries, to learn about the peoples' cultures, histories, struggles, and achievements. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JLIT, JSPE **ISP:** AFR, REE

EGL 252 - The Islamic World and Global Literary Culture

Course Units: 1

The Islamic World and Global Literary culture course asks how two designations of the global - world literature and the Islamic world - think through the concepts of globalization and community. Using insights drawn from recent literary, sociological, and theological research we will consider the important and dynamic role of religion, specifically Islam, in contributing to cultural identity on a global scale.

Students will engage with literary and theoretical texts that have been produced within, by, and about these communities to explore how authors reckoned with the world community envisioned by Islam and how Islamic authors, both practicing and non-religious, have been received into the global literary sphere. In addition to reading canonical novels, topics covered will include critical and cultural theories related to world literary study such as orientalism, the role of translation, literary prize culture, non-Western feminisms, and minority studies. Students will read a challenging and engaging range of texts, including novels, essays, short stories and travelogues produced by artists engaging with diverse geographic and cultural backgrounds drawn from the Arab World, Turkey, the Indian subcontinent, as well as from diaspora communities in Europe and America. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, LCC, WAC, GLIT, GCHF, GSPE **ISP:** AIS

EGL 253 - Narratives of Haunting in US Ethnic Literature

Course Units: 1.0 This course examines the theme of haunting in contemporary US ethnic literature. With this theme in mind, we will investigate the following questions throughout the trimester: Why is haunting such a prevalent theme in ethnic writing? What do we mean when we say that a text is haunted? What are the causes of haunting? What is possession? What are some ways to dispossess or exorcise ghosts? What are the functions of ghosts? Is there such a

thing as a good haunting? What are their messages to us? How do we listen to ghosts? Authors include Lan Cao, Nora Okja Keller, Maxine Hong Kingston, Cynthia Ozick, Toni Morrison, Sandra Cisneros, and Leslie Marmon Silko. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, JCHF, JLIT **ISP:** AMS, GSW

EGL 254 - Discourses on the Viet Nam/American War

Course Units: 1.0 This class will examine various perspectives on "The Vietnam War," or, as the people of Viet Nam call it, "The American War." In our archeological exploration into the nature of knowledge about this period in Viet Nam/U.S. history, we will not privilege one perspective over another. Rather, we will examine the diverse political, ideological, and moral positions from which various groups, such as the U.S. government, U.S. soldiers, U.S. citizens, the North Vietnamese people, and the South Vietnamese people, perceive this historic conflict. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, GCHF, GLIT **ISP:** AIS, AMS

EGL 255 - Asian American Literature and Film

Course Units: 1.0 If you are interested in the diverse history of Asian immigration in the U.S., take this course. Together as a class, we will examine major historical moments in Asian America: the first wave of Asian immigration in the mid-nineteenth century, the anti-Asian laws of the late nineteenth century, the Japanese internment during the Second World War, the emergence of Asian American studies during the 1960s Civil Rights Movement, Southeast Asian refugees after the Viet Nam/American War, and the contemporary turns to the transnational and the pan ethnic. To cover these historical moments, we will read the following texts: Island: Poetry and History of Chinese Immigrants on Angel Island, Eat a Bowl of Tea, Farwell to Manzanar, When Broken Glass Floats, American Born Chinese, and American Son. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AIS, AMS, FLM

EGL 256 - Southeast Asian-American Experience

Course Units: 1.0 This course examines the diverse literatures, histories, and cultures of the Vietnamese, Cambodian, Hmong and Laotian through the lens of war, migration, and return. Specific attention will be paid to how the War in Vietnam spread to neighboring countries such as Cambodia and Laos, resulting in mass migration of people from Southeast Asia to the West, specifically the United States. We will examine the literatures, oral testimonies, films, and music created by Southeast Asians in America. Possible authors include: Andrew Lam, Bich Minh Nguyen, Le Thi Diem Thuy, Loung Ung, Chanrithy Him, Kao Kalia Yang, Mai Neng Moua, and Burlee Vang. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AIS, AMS

EGL 257 - Irish American Literature: Race, Gender, Sexuality

Course Units: 1.0 **(Fall: Bracken)** This course will provide an introduction to Irish American literature from the 19th century to the present day, looking at a number of issues. Specific attention will be paid to constructions of race, gender, and sexuality and the texts examine here will be explored with questions relation to these in mind. Throughout the course, we will consider race relations in 19th and 20th century US culture, new scholarship on the Black and Green Atlantic and trace the problematics of Irish America's (self) construction of whiteness. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUM, HUL, WAC **ISP:** GSW

EGL 258 - Changing Ireland

Course Units: 1.0 This course will be looking at the changing nature of Irish society since the economic boom of Celtic Tiger Ireland in the 1990's. EU membership, US investment and the effects of global internationalism have brought about radical culture transformations in the country which in turn are altering conventional meanings of Irishness and Irish identity. We will be looking at representations of this changing Ireland in literature and film, paying attention to issues such as new technologies, post-feminism, sexualities, race and ethnicity. Texts will include Martin McDonagh's *In Bruges*, Anne Enright's novel *The Wig My Father Wore*, and the poetry of Leanne O'Sullivan. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM **ISP:** FLM, GSWS

EGL 259 - Irish Literature and Film

Course Units: 1.0 The aim of this course is to introduce you to the field of Irish Studies, examining how issues relating to language, identity and nationhood are intimately connected in Irish literature and film. In this course we will be studying Irish literary texts from the beginning of the 19th century to the late 20th century, examined alongside a selection of contemporary films. This course will ask you to consider the ways in which cultural concerns of the Irish past continue to haunt the landscape of the present day, paying attention to issues of gender, class, race and sexuality. Texts will include Lady Morgan's *Wild Irish Girl*, Bram Stoker's *Dracula*, Samuel Beckett's *Waiting for Godot* and Neil Jordan's film *Michael Collins*. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, LCC, HUM **ISP:** FLM, GSWS

EGL 260 - James Joyce

Course Units: 1.0 This course will focus entirely on Irish writer James Joyce's modernist masterpiece *Ulysses*, published in 1922. This is a complex, challenging and experimental novel (900 pages), which uses stream of consciousness as its primary literary mode. Set on just one day, June 16th 1904, it tells the story of Leopold Bloom, Stephen Dedalus, and Molly Bloom as we learn of their pasts, presents and hopes for the future. Joyce's novel is a meditation on the lives of these characters, and the modern colonial Dublin they inhabit, however it is also a self-reflective piece of literature which foregrounds issues relating to language, style, and storytelling. In the course, we will successively read all of the chapters of *Ulysses*, analyzing it through a variety of critical paradigms, including post-colonialism, modernism, and feminism. We will also watch a number of films relating to Joyce and his work, such as Nora, Bloom, and Ulysses, and at the end of the course we will consider the commodification of Joyce as the 'Great Irish Writer' through the yearly Bloomsday celebrations of June 16th in Dublin. Students are encouraged to read Joyce's *Dubliners* and *A Portrait of the Artist as a Young Man* before the class begins. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM

EGL 261 - Modernism and Modernity

Course Units: 1.0 This course examines British fiction from the early twentieth-century, a period often referred to as the "modernist" era. The moderns experimented with new, different, and exciting ways of writing that perplexed many readers, yet such changes have come to be seen as important innovations in literary style. In addition to engaging with questions of form and style, the moderns were also interested in subjects that were previously viewed as taboo, questionable, and, as such, often unspeakable. These topics included trauma, the lasting effects of war, sexual experimentation, adultery, insanity, and newly carved out gender and familial roles. Throughout our term together, we will critically consider, discuss, and write about the dynamic between the content of modernist writing and its innovative style and form. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** GSWS

EGL 262 - Global Modernisms

Course Units: 1.0

While traditionally modernism has been considered a largely European and North American affair, in recent years scholars have sought to contest and expand this canon. New research has shown that modernism existed all over the world, from Africa and Latin America, to the South Pacific and East Asia, and on all continents in between. This course introduces students to a new globally expanded understanding of modernism, while asking them to actively contribute to the ongoing expansion of the canon. We will work with new scholarship and archival materials, in order to better understand what happens to modernism as it spreads around the world.
Writers may include African writers such as Léopold Sédar Senghor, and Wole Soyinka; Caribbean writers Claude McKay and Aimé Césaire; Japanese poets, Hirato Renkichi and Chika Sagawa; Chinese writers such as Lu Xun and Eileen Zhang; Indian writers from Tagore and the Indian Progressive Writers Association to the 1960s avant-gardes; and Turkish modernists including Ahmet Hamdi Tanpınar and the Garip poets.

Students will have the opportunity to work with texts in any languages they may read, or to work exclusively in English (including in translation). By exploring literary criticism on modernism in its historical and global contexts, students will gain an understanding of major debates which have shaped modernist studies across the twentieth century including New Criticism, feminist studies, postcolonial studies, as well as more recent debates on the global turn including weak theory and "bad" modernisms. Students will also improve their writing and independent research skills through an anthology project that invites them to contribute to the ongoing canonization of global modernist texts through producing scholarly annotations, introductions, and digital editing. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, LCC, WAC, GLIT, GCHF, GSPE **ISP:** AIS

EGL 263 - Literature and Sexuality

Course Units: 1.0 By examining literary and cultural representations, this course both interrogates the politics and social dynamics of various sexual identities and subjectivities and examines complex representations of both gender and sexuality. This course also focuses on the literary study of important straight, gay, lesbian, queer, bisexual, and transgender writers within their evolving social, historical, and cultural contexts over the last few centuries. We will discuss some of the major critical debates both in literary studies and in gender and sexuality studies, asking and attempting to answer the following questions: How is sexuality represented in literature? How has the relationship between literature and sexuality evolved over time? Who creates the discourses on sexualized bodies and identities? How can we understand the relationship between lived experience and literary/cultural representations? What might be queer about literature? What makes a narrative queer? **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** GSW

EGL 266 - Black Women Writers

Course Units: 1.0 This course provides an introduction to the major themes and concerns of twentieth- and twenty-first century African American women writers. We begin in the 18th century and move quickly to the 20th and 21st. We will examine the ways in which black womanhood is characterized through intersecting categories of race, gender, class, sexuality, and empire. We will explore how selected authors wrestle with stereotypical images of African American women, examine the connections between black womanhood, community, and empire, and discuss the benefits and limitations of the concept of "black women's writing." Possible writers include Frances Harper, Maria Stewart, Anne Spencer, Zora Neale Hurston, Gwendolyn Brooks, Toni Morrison, Audre Lorde, Gloria Naylor, Octavia Butler, and others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM **ISP:** AFR, AMS, GSW

EGL 267 - The Virginia Woolf

Course Units: 1 Virginia Woolf is, quite frankly, one of the most significant writers transnationally and transhistorically. Aside from her acclaimed, now often canonical novels, Woolf wrote short stories and essays; indeed, her letters and diaries, in addition, have become a core part of modernist literary history. This class examines Woolf and much, though notably not all, of her work within their social, cultural, and historical contexts. By tracing the evolution of Woolf's work, we will interrogate her stylistic innovations, shifting political ideologies, remarkable social

circles, and complex life. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUM, HUL, WAC **ISP:** GSW

EGL 268 - Staging Black Feminisms

Course Units: 1.0 This course considers the feminist and anti-racist practices of Black female dramatists, placing their plays within their cultural contexts. We will examine the ways in which these works construct Black feminist histories, genealogies, and cultures while challenging racial and sexual hierarchies in both American society and artistic canons. Each week, students will read a landmark dramatic text by a Black female playwright as well as seminal sociological texts and scholarly studies that contextualize the work within broader artistic and social movements. Through discussions, field trips including attendance at theatrical performances and other cultural events, reading responses, and a final presentation based on individual research, students will hone their thinking about the development of Black female voices in American dramatic literature and society. **Cross-Listed:** SOC 209 and ATH 248 **Prerequisite(s):** One 100-level English ourse or a score of 5 on the AP English Language or Literature and Composition test. **CC:** SOCS, HUL, HUM, JCAD, JCHF, JLIT, JSPE **ISP:** AFR, GSW

EGL 269 - New Women around the World

Course Units: 1.0 The idea of the New Woman emerged around the world in the first half of the twentieth century. From Beijing to Berlin, Tokyo to Istanbul, women became visible as chorus girls, urban migrants, starlets, citizens, freedom fighters, consumers, and leisure seekers in new public spaces. This class will examine how literature represented and responded to the global phenomenon of the New Woman, tracing how various national, racial, and colonial contexts gave rise to distinct iterations of the New Woman and examining the linkages among the many geographical and political regions in which she appeared. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** JLIT, JCHF, WAC **ISP:** AFR, AIS, AMS, GSWS

EGL 270 - Imagining the Nation(s): Ireland/India

Course Units: 1.0 This course will explore the colonial and postcolonial literary histories of India and Ireland, exploring the decolonizing energies of both countries' key writers. A comparative class, we will analyze three important moments in Ireland and India's literary histories, focusing on the colonial, postcolonial, and globalized periods. Beginning with the colonial, the class will study the late 19th and early 20th century era, focusing on the writers Rabindranath Tagore and W.B. Yeats, both Nobel literature prize winners, modernist innovators, and decolonial activists for independence in their respective countries. Following this, we will move into the mid to late 20th century postcolonial periods of India and Ireland, specifically reading the work of Edna O'Brien and Arundhati Roy. Their work (and its reception) exposes many of the colonial legacies in post-independence, as well as its contradictions and gendered and religious repressions. Lastly, the course will consider the work of two contemporary 21st century writers, Sally Rooney and Meena Kandasamy, exploring zones of connection between globalization, colonial histories, gender and sexuality. **Prerequisite(s):** EGL 100 or EGL 101 or EGL 102 or a grade of 5 on the AP English Literature or Language test. **CC:** HUL, HUM, WAC-R **ISP:** GSWS

EGL 271 - Dark Deeds: Crime in the Adirondacks

Course Units: 1.0 Merriam Webster defines a crime as an illegal act for which someone can be punished by the government; especially: a gross violation of law. A crime, however, is also defined in moral and ethical terms, as a grave offense, especially against morality; something reprehensible, foolish, or disgraceful. Students in this course will explore a variety of literary and historical illustrations of each of these types of crimes as they have occurred in the Adirondack Mountains throughout history. As we investigate various illegal acts in the Adirondacks, we will also examine underlying moral crimes, such as poverty and economic depression, which have the potential to lead individuals toward a life of crime. We will explore Chester Gillette's 1906 murder of Grace Brown at Big Moose Lake and the highly sensationalized murder trial that ensued, alongside Theodore Dreiser's 1925 novel that was based on the

murder and criminal case. We will analyze the prison system in the Adirondacks, and we'll investigate various mobsters who stayed in Saratoga Springs during the Prohibition Era. We will also explore the crime of contagion as we read works written about tuberculosis and various sanatoriums in Saranac Lake. Part of our class time will be held at the Kelly Adirondack Center (KAC), working in the Adirondack Research Library. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, ENS, LAW

EGL 272 - Indigenous Sovereignty: Indigiqueer and Two-Spirit Voices

Course Units: 1.0 Students will consider literary works from several Native American writers who challenge white privilege and modes of possession. Texts will support place consciousness and tribal revitalization through an intergenerational awareness of intercultural dialogue. The course will focus on Indigenous counter-narratives that endeavor to dislodge the dominance of canonical white writers and, using a queer theoretical lens, will explore ways to reframe binary heteronormative practices.Course readings will focus on the consequences of dualistic thinking, colonization, and Eurocentric ideals. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **ISP:** ENS

EGL 273 - Disability, Literature, and Society

Course Units: 1

Through close reading and analysis of literary and cultural representations of disability, this course provides an introduction to the interdisciplinary field of disability studies. We will take the social model perspective that the experience of a disability is shaped less by physical or intellectual difference than by social attitudes and material barriers to access as a point of departure. All of the texts we will discuss this term represent disability in one way or another, some more centrally than others. On the one hand, we will catalogue the ways that literary texts create and disseminate damaging cultural narratives about disabled individuals. On the other, we will consider how various artistic works can resist dominant cultural representations of disability and challenge deep-seated ideals of physical and cognitive normalcy. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test.
CC: JLIT, WAC

EGL 274 - Uncanny Texts: Literature and Psychoanalysis

Course Units: 1.0 By interrogating literary, cultural, and psychoanalytical texts, this course examines the relationship between literature and psychoanalysis; the two have been in close conversation since the early theoretical developments that began to define psychoanalysis. From Freud's use of Hamlet and The Sandman as key cornerstones of his own theories to the way that J.K. Rowling's Harry Potter and the Sorcerer's Stone illustrates Jacques Lacan's notion of the Mirror Stage, literature and psychoanalysis have been dialogically and dynamically intimate bedfellows. During our term, we will look at psychoanalytical writings by Sigmund Freud, Jacques Lacan, and others in conjunction with transhistorical literary and cultural texts. We will examine specific psychoanalytical concepts like the unconscious, desire, sublimation, shame, the uncanny, the death drive, the primal horde, infantile sexuality, and mourning and melancholia. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** GSWS

EGL 275 - Autobiography

Course Units: 1.0 This course explores the development of the autobiographical genre from the late 18th century to the present day, beginning with Jean-Jacques Rousseau's *Confessions*. Through a combination of close reading, historical contextualization, and critical analysis, we will engage with key texts that have shaped the autobiographical form. Readings will focus on the interplay of memory, truth, and storytelling, as well as the ethical dimensions of self-representation. We will also explore the ways authors shape their life stories to reveal complex identities, cultural

contexts, and historical moments. Reading lists vary widely from term to term. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 276 - Literature of the Manor House

Course Units: 1.0 In this course we will investigate the rich and complex history of the genre of English manor house fiction. Focusing on texts ranging from Jane Austen's *Northanger Abbey* and E. M. Forster's *Howards End* to Kazuo Ishiguro's *The Remains of the Day*, Sarah Waters' *The Little Stranger*, and Ian McEwan's *Atonement*, we will explore issues of gender, sexuality, race, and especially class in both course readings and class discussions. Furthermore, we'll examine a number of filmic representations of British country house life, including Robert Altman's *Gosford Park* and Julian Fellowes' *Downton Abbey*. In addition to crafting course papers, students will have the option to research, create, and showcase their own multi-media projects exploring virtual manor homes via a range of freely downloadable programs and platforms. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD, JLIT **ISP:** GSW, STS

EGL 277 - Philosophical Fiction

Course Units: 1.0 This course will deal with works of fiction in which philosophy or philosophical concepts play a significant role. A key issue is the relationship between ideas and (literary) form. Authors will come from a wide range of traditions and may include Descartes, Rousseau, Wordsworth, Nietzsche, Camus, Dostoevsky, Borges, Calvino, Lem, and Le Guin. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** REE

EGL 279 - Literature and Science

Course Units: 1.0 An interdisciplinary examination of the interactions between literature and science. Topics will vary from year to year and may include science writing, the representation of science and scientists in literature, literature inspired by science, literature and science as competing ways of knowing the world, the figurative dimension of scientific writing, and speculative fiction. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, STS

EGL 280 - Nature and Environmental Writing

Course Units: 1.0 This course will focus on the traditions of nature and environmental writing in the American context, with an emphasis on the social and cultural dynamics of the environment and environmental action. Among other questions, we will ask ourselves: How do class, gender, and race enter into the nexus of social interactions that shape our environment? What is the place of literature in community, literacy, and environmental activism? What are the connections between the ways we speak and write about the environment and our actions toward the environment? How does the wilderness concept affect the ways citizens have access to public spaces? We will consider the concept of "nature" as we move through the course, culminating (if you like) with some nature writing of your own. Readings may include Thoreau; Carson; Leopold; Kingsolver, and selections from *Reading the Roots: American Nature Writing Before Walden*; *Colors of Nature*; Lauret Savoy, T*race: Memory, History, and the American Landscape*; and F. Marina Schauffler, *Turning to Earth: Stories of Ecological Conversion.* **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, ENS, STS

EGL 281 - Environmental Psychology and the American Literary Landscape

Course Units: 1.0 Environmental research psychologist Maria Vittoria Giuliani emphasizes that human-to-place attachments "not only permeate our daily life but very often appear also in the representations, idealizations and

expressions of life and affect represented [in] literature." Indeed, many literary works emphasize humanity's basic attachment needs and the importance person-to-place bonds have in the development of the human psyche. American fiction writers frequently employ descriptions of American landscapes as inspiration for character and plot development, and American nature writers often emphasize the way in which wilderness environments may influence one's mental and physical health and emotional well-being. In fact, recent studies in the field of cognitive neuroscience provide empirical evidence to substantiate the theory that exposure to a natural environment may actually generate structural changes in the brain by increasing oxygenation and blood flow that occur in response to neural activity. Hence, this course will employ contemporary studies in place attachment, environmental psychology, and cognitive neuroscience to examine the way in which various literary works illustrate the important role environment plays in aiding or obstructing one's ability to think, reason, remember, problem-solve, process information, use language, or be creative. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, ENS

EGL 282 - The Theory of Things: Objects, Emotions, Ideas

Course Units: 1.0 Everybody wants things, needs things, likes things, loves things! Things drive economies, incite wars, save lives; things help us communicate, work, play, move, talk, not talk, and so much more. The theory of things derives from humanity's interest in material culture studies and the connections that can be made between people and physical objects. But there is so much more to consider when discussing 'things,' such as those things that are not physical objects-love, hate, desire, thoughts, feelings, moods, pain, concepts, ideas, and words, just to name a few. In this course, students will discuss both material and immaterial 'things' and in particular how 'things' affect people, predominantly marginalized individuals and groups. *Course developed with support from the Byron A. Nichols Fellowship for Faculty Development. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT, JCHF, JSPE **ISP:** GSW

EGL 283 - Pilgrims, Flâneurs, & Pranksters: The Walk in Literature

Course Units: 1.0 From the poems of William Wordsworth to contemporary novels such as Teju Cole's *Open City,* literary narratives often feature journeys taken on foot. Among other things, a walk, in literature, can structure plot, serve as metaphor, or anchor a stream-of-consciousness narrative within a physical setting. A walker, like a reader, is a consumer of sights. But she is also a producer of thoughts, words, and creative pathways through the world. In this course we will investigate the relationships between walking, thinking, reading, and writing, considering the ways we move through spaces (natural, urban, public, solitary) and the forces and questions that shape our experiences in those spaces. Our texts will include standard novels and essays, as well as work by walking artists like Richard Long, audio-video artist Janet Cardiff, and street artists, for whom the world is the page and the walker is the reader. You will write traditional academic papers, but we will also walk, and some assignments will encourage you to create walking texts of your own. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT

EGL 284 - Interactive Fiction Workshop

Course Units: 1 Interactive fiction is storytelling that uses technology to create an interactive "reading" experience, requiring the reader to make choices that influence the plot. In this course you are going to read, critique, and create interactive fiction. You'll develop your storytelling skills, and along the way you'll learn some programming concepts, and history of narrative. video games. We'll also consider how race, gender, class, sexuality, and (dis)ability shape our experiences of these games as players and writers. No previous CS experience is necessary. Students will need access to a laptop for class. **Cross-Listed:** CSC 084 **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of instructors. **CC:** HUL, HUM, SET, WAC, JCAD, JETS, JLIT **ISP:** AMS, GSW, STS

EGL 285 - Nabokov

Course Units: 1 Vladimir Nabokov was a language genius, expatriate, chess master, butterfly biologist, and one of the best literary stylist in English. His famous (and infamous) novel *Lolita* has been scandalous ever since its publication in 1955. His texts have inspired movies, passionate discussions, and a polyglot global following. In this class, we will read several of Nabokov's novels, short stories, and his autobiography. We will watch movies based on his books. If you love serious reading and discussion, if you enjoy History, if you want to expand both our mind and your vocabulary, this course is for you. **Cross-Listed:** MLT 266 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** REE

EGL 286 - Transnational Literature, Film, and Theory

Course Units: 1.0 While modern colonialism dating back to the 18th century brought the entire globe into contact, the nation-state remained the relevant unit of culture. Unprecedented levels of migration and technological development in the past century, however, have made it impossible to ignore the fact that we are now living in a thoroughly transnational world-a new world order whose contours we yet barely grasp. How do social identity formations shift when nation-state boundaries are challenged? What sorts of new ethical dilemmas and self-other relations are engendered? Is anti-colonialism, staged as it was in the theater of national liberation, de-fanged or enabled by transnationalism? What new aesthetic forms and modes are generated by transnationalism; and how do cosmopolitans, exiles, diasporics, hybrids, and long-distance nationalists affect the field of culture? These are among the questions we will examine over the course of the term through the complementary lenses of film, literature, and theory. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of instructor. **CC:** HUL, HUM, WAC **ISP:** FLM

EGL 287 - Gender and Sexuality in Film

Course Units: 1.0 This course examines the intersecting roles played by gender and sexuality in our media, with particular emphasis placed on film and video. Over the course of the semester, we will investigate the ways in which various media texts transmit and construct gender and sexuality and how viewers interpret and integrate these representations into their daily lives. As we analyze films by such directors as Alfred Hitchcock, Douglas Sirk, Julie Dash, Trinh T. Minh-ha, and Jonathan Caouette we will explore the ways in which conceptions of gender and sexuality are facilitated and constrained by legal, medical, and ethical discourses that emerge from specific historical and geographic contexts. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of instructor. **CC:** HUM, WAC **ISP:** FLM, GSW

EGL 288 - Film as Fictive Art

Course Units: 1.0 What exactly does the designation "indie" mean when both filmmakers who disseminate their work online and specialized divisions within Hollywood studios claim this term as their own? In this course we will trace the development of the independent cinema from the late 1960s when first-time directors challenged Hollywood norms to create the New American Cinema, through its heyday the 1990s, into the present era-where many argue it has become thoroughly institutionalized. In examining the enormously flexible characterization "independent" we will draw on of a variety of code systems (cultural, artistic, narrative, cinematic, and intertextual) to analyze the work of such directors as George Romero, Julie Dash, Todd Haynes, Mira Nair, Jim Jarmusch, Spike Lee, and Kelly Reichardt. **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC, GCAD, GLIT, GSPE **ISP:** AMS, FLM

EGL 289 - The Essay Film Workshop

Course Units: 1.0 Deriving its meaning from the French *essayer*: to try; to attempt, the essay film is an experiment in form and expression. Weaving together elements of fiction and documentary, the essay film foregrounds the subjectivity of the filmmaker and engages the viewer as participant and collaborator. Relying heavily on montage, the essay film often employs found footage as well as cinema verité techniques-where the camera acts as quasi-therapist, eliciting new performances and confessions. In an approach combining theory and practice, we will explore the many

aspects of the essay film genre. Foundational readings by Michel de Montaigne, Georg Lukács, and Phillip Lopate will be paired with visual essay by Issac Julian, Chantal Akerman, Mona Hatoum, and Marlon Riggs among others. Experimenting with form and method, students will produce weekly writings and visual exercises and an extended essay film. **Cross-Listed:** FLM 289 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, FLM

EGL 290 - Studies in Film Genre/Style: Film Noir

Course Units: 1.0

Over the course of the term, we will analyze the history and aesthetics of genre categories and their revisions with respect to specific codes and characteristics, audience expectations, technological developments, and publicity practices. In our investigation of the question of genre, we will engage such key concepts in film theory as authorship, narrative, mise-en-scène, suture, spectatorship, and the gaze. As we seek to understand why genres gain popularity in certain historical moments and the ways in which genres are revised, we will employ a variety of critical tools, drawn from genre theory, critical race studies, environmental studies, and theories of gender and sexuality. Finally, we will ask whether genre studies as a critical approach is keeping pace with the many new developments shaping cinematic form.
Film Noir

This term, our investigation of genre will focus specifically on film noir. We will study the genre's emergence from German Expressionism, pre-code gangster movies, screwball comedy, and hard-boiled detective fiction and consider the historical factors that led to the burgeoning of film noir in the 1940s and 50s. In addition to the standard characters (detective, femme fatal, gangsters, "deviants"), we will analyze filmic styles (low-key lighting, voice-over narration, etc.) and themes of alienation, corruption and existential drift that characterize the genre. From its origins in post-World War II America, we will explore film noir's radical revisions and geographic relocations as it is taken up in such places as France, Hong Kong, Korea, and Mexico. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUM, WAC, JLIT, JSPE **ISP:** AMS, FLM

EGL 291 - From the Drama Desk: Performance, Culture & Creativity Drama Criticism Workshop

Course Units: 1.0 This is an intensive and practical course on reading and writing dramatic criticism. A look at the concepts and practices of theater criticism in American Theater begins with a discussion of major theories of Western drama, from Aristotle to Artaud. Through the reading and discussion of contemporary examples of dramatic criticism and directed studies in techniques of journalistic writing students will gain an understanding of the nature and function of a theater review and an ability to critically view theater productions. Writing will include research essays, response papers and critical reviews of play scripts as well as performances on campus and at professional theaters. **Cross-Listed:** ATH 240 **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUM, LCC, WAC, JCAD, JCHF, JLIT, JSPE

EGL 292 - Contemporary American Theater and Drama

Course Units: 1.0 This course examines trends and notable works visible today in the American theater. We will read plays that have had major successes on Broadway and American regional theaters, as well as study avant-garde works and theatrical and performance artists engaging with new forms and techniques in order to transform theatrical performance in our culture today. Through class discussions and assignments including student presentations, seeing professional theatrical performances, research projects, and critical essays, students will develop their ability to engage critically with theatrical art and artists of our present moment. **Cross-Listed:** ATH **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUM, WAC, JCAD, JCHF, JLIT **ISP:** AMS, GSW

EGL 293 - Workshop in Poetry

Course Units: 1.0 This is a course for students with a serious interest in writing poetry. Classes will be divided between discussions of literary technique, workshop critiques of student writing, and consideration of the work of several contemporary poets. Students will prepare a final portfolio of ten to fifteen pages. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 294 - Workshop in Fiction

Course Units: 1.0 This is a course for students with a serious interest in writing fiction and imaginative prose. We'll read and discuss plenty of contemporary fiction, with a particular focus on the short story, considering each piece from a writer's perspective: How is it put together? What makes it unique and interesting? How and what can we learn or steal from it for our own writing? Students will put into practice what we discover in our reading, developing skills at building characters, exploring narrative form, and honing their use of image and voice. Students will complete and revise a variety of exercises and creative pieces, including three short stories. Much of class time will be devoted to workshop discussion of student stories. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC

EGL 295 - Workshop in Creative Non-Fiction

Course Units: 1.0 In this workshop in creative nonfiction, students write personal stories and investigate the personal as an artistic space for deep reflection, healing, empowerment, and playfulness. We study CNF pieces written by both established practitioners of the genre and fellow students. Ultimately, we explore the fraught boundary between fiction and nonfiction and examine the implications in Dickinson's advice: 'Tell all the truth but tell it slant.' **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of instructor. **CC:** HUL, HUM, WAC

EGL 295H - English Honors Independent Project 1

Course Units: 0.0 **(TBD: Staff)** Requires faculty approval - credit earned upon completion of EGL 296H

EGL 296 - Screenwriting Workshop

Course Units: 1.0 This course is designed to introduce student to the art and craft of screenwriting. In addition, to screenplay format, we will investigate character development, structure, narrative style, dialogue, and techniques of visual storytelling. Screenings, screenplay analysis, outside reading, in-class discussion, as well as guest lectures will broaden students' understanding of the screenwriting process. By the end of the term, students will have completed several short scenes and one short screenplay. **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Compositon test, or permission of the instructor. For Film studies students, EGL 150 is recommended. **CC:** HUM, WAC, JLIT, JCAD **ISP:** AMS, FLM

EGL 296H - English Honors Independent Project 2

Course Units: 1.0 **Prerequisite(s):** EGL 295H **CC:** HUL, HUM

EGL 297 - Literary Research Practicum 1

Course Units: 0.0 **(TBD: Staff)** The English research practicum is designed to allow students to engage in advanced literary research during their undergraduate careers. Students will work on the research project of a faculty member,

under that faculty member's direction. This course requires advance permission of the instructor, who sets the course requirements. To receive Pass/Fail credit equivalent to one course, the student must earn passing grades for three terms of the practicum experience. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test.

EGL 298 - Literary Research Practicum 2

Course Units: 0.0 **(TBD: Staff)** The English research practicum is designed to allow students to engage in advanced literary research during their undergraduate careers. Students will work on the research project of a faculty member, under that faculty member's direction. This course requires advance permission of the instructor, who sets the course requirements. To receive Pass/Fail credit equivalent to one course, the student must earn passing grades for three terms of the practicum experience. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test.

EGL 299 - Literary Research Practicum 3

Course Units: 0.0 The English research practicum is designed to allow students to engage in advanced literary research during their undergraduate careers. Students will work on the research project of a faculty member, under that faculty member's direction. This course requires advance permission of the instructor, who sets the course requirements. To receive Pass/Fail credit equivalent to one course, the student must earn passing grades for three terms of the practicum experience. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test.

EGL 300 - Jr. Seminar: Poetry Workshop

Course Units: 1.0 A workshop course for students with some experience and a serious interest in the writing of poetry. **Prerequisite(s):** It is strongly recommended, although not required, that students have already taken EGL 293 . One 100-level and two 200-level English courses or instructor's permission. **CC:** HUL, HUM, WAC

EGL 301 - Jr. Seminar: Fiction Workshop: Writing Activist Fiction

Course Units: 1.0 In this intermediate-level fiction workshop, students will build skills in fiction writing and critiquing fiction, compile a portfolio of short stories, and gain insight to the landscape of contemporary creative writing. Our primary focus will be on student writing. Reading assignments will contribute to understanding contemporary fiction writing, with special attention on the short story and the craft of writing, from idea generation through revision. Some sections of this course will focus on a particular skill or aspect of the fiction writer's craft, such as writing dialogue, using research to write better fiction, or developing complex characters. Other sections will focus on a particular theme or subgenre such as the contemporary ghost story, activist fiction, autofiction, climate fiction, or historical fiction. Contact the instructor or the English Department for details on particular sections. **Prerequisite(s):** It is strongly recommended that students have already taken EGL 294. One 100-level and two 200-level English courses or instructor's permission. Previous workshop experience is recommended. **CC:** HUL, WAC, HUM

EGL 302 - Jr. Seminar: Literary Theory (Winter)

Course Units: 1.0 Reading involves more than just the reader and the text; when we read, our cultural and personal experiences inform our reading. This course considers different critical approaches to literature-from the history of English as a discipline onward - in an attempt to help contextualize reading practices. We will read primary critical texts, primary literary texts, and examples of literary criticism. We will discuss various schools of literary criticism, including (but not limited to) Structuralism, Post-structuralism, Marxism, Psychoanalysis, Feminism, Queer Theory, Disability Studies, Postcolonial Theory, and Critical Race Theory. By the end of the semester, students will be able to use appropriate terminology, produce critically informed readings, and speak authoritatively about different critical

approaches to literature. This course prepares majors and ID majors to apply to write Honors theses. **Prerequisite(s):** It is strongly recommended that petitioning students have GPA's of 3.3 or above. One 100-level and two 200-level English courses. **CC:** HUL, HUM, WAC, WAC-R **ISP:** GSW

EGL 304 - Jr. Seminar (Fall):

Course Units: 1.0 **Prerequisite(s):** One 100-level and two 200-level English courses or instructor's permission. **CC:** HUL, HUM, WAC

EGL 305 - Jr. Seminar (Winter): Global Ulysses

Course Units: 1.0 When James Joyce's novel *Ulysses* was published in 1922, critics praised it as a text which created new literary forms leading to a radical shift in the understanding of what literature was able to say and do. The advent of *Ulysses* is considered a watershed moment in the history of Anglophone literature and the novel is often hailed as the most important book of the 20th century. Yet, the text's publication also created a huge uproar for authors of fiction from around the globe. Joyce's ambitions to encompass and record, in a single text, all of Irish culture and minute details of the city of Dublin, inspired other authors to search for ways in which their own national culture could be summed up in a single text. In this seminar we will explore authors who have taken up the challenge to write a "*Ulysses* of their Own," using the formal experiments of Joyce's novel as a springboard to reflect on their own national literary traditions in the face of a rapidly changing and unevenly experienced modernity. We will read texts such as Alfred Döblin's *Berlin Alexanderplatz* (Germany); Yasunari Kawabata's *The Scarlet Gang of Asakusa* (Japan); GV Desani's *All About H. Hatterr* (India); Ahmet Hamdi Tanpınar's *A Mind at Peace* (Turkey); and Derek Walcott's *Omeros* (Saint Lucia). The seminar will introduce students to theoretical concepts integral to the study of Joyce's novel and its global reception such as multiple modernities, global modernisms, postcolonialism, encyclopedic form, translation and reception theory. **CC:** HUL, HUM, WAC-R

EGL 306 - Jr. Seminar (Spring): The Beatles, Motown, and Taylor Swift

Course Units: 1.0 This is a course on the cultural politics of popular music. Since pop music is, by definition, ephemeral - shaped by and to some degree shaping the attitudes of a particular time and place - it can offer insights into what those attitudes were. On the contrary, some pop music transcends its cultural milieu, thus revealing something deeper about our culture in general. The Beatles, the most influential and still the most popular band of the rock era, offer one example; the musicians of Motown and other predominantly African-American recording platforms like Stax-Volt, without whom there would be no Beatles, offer another. After examining the lasting contributions of these artists as a foundation, we will, in the last weeks of the term, look at more contemporary pop musicians and their impact. Taylor Swift will be the focus, but students may nominate their own candidates (Beyonce? Rihanna? The Replacements?) for pop immortality and impact as well. **Prerequisite(s):** One 100-level and two 200-level English courses or instructor's permission. **CC:** HUL, HUM, WAC-R **Note:** No musical knowledge is required for this course. An ability to keep time and notice stand-out musical elements (key modulations, odd or interesting chords) would be useful but is not required. If you can play a bit, though, feel free to do so.

EGL 400 - Sr. Seminar: Advanced Poetry Workshop

Course Units: 1.0 An advanced workshop course in the writing of poetry. **Prerequisite(s):** It is strongly recommended that students have already taken EGL 293 , EGL 300 . Six English courses or instructor's permission. **CC:** HUL, HUM, WS

EGL 401 - Sr. Seminar: Advanced Fiction Workshop

Course Units: 1.0 An advanced workshop course in the writing of fiction. **Prerequisite(s):** It is strongly recommended that students have already taken EGL 293 , EGL 301 . Six English courses or instructor's permission. **CC:** HUL, HUM, WS

EGL 402 - English Honors Thesis Seminar 1

Course Units: 0.0 A two-term course required for all English majors who are writing an honors senior thesis. The course is conducted mainly as a writing workshop to guide students through the process of writing a thesis. Workshops focus on developing the research and writing skills needed to complete a successful thesis. There will be weekly individual meetings with the instructor as well as weekly group meetings. The course instructor will direct your thesis. Credit depends on completing both 402 and 403. **CC:** WS

EGL 403 - English Honors Thesis Seminar 2

Course Units: 2.0 A two-term course required for all English majors who are writing an honors senior thesis. The course is conducted mainly as a writing workshop to guide students through the process of writing a thesis. Workshops focus on developing the research and writing skills needed to complete a successful thesis. There will be weekly individual meetings with the instructor as well as weekly group meetings. The course instructor will direct your thesis. Credit depends on completing both 402 and 403. **CC:** HUL, WS, HUM

EGL 404 - Sr. Seminar (Fall): The Faerie Queene

Course Units: 1.0 This course will explore Edmund Spenser's wild and wacky epic poem, *The Faerie Queene.* Published in 1596, *The Faerie Queene* is full of powerful women, knights, dragons, monsters, and more; its rich cast includes both Queen Elizabeth I and a young King Arthur. In depicting a world full of chivalry and adventure, this poem offers striking insights into how Shakespeare's contemporaries understood their society and themselves. Full of beautiful lyrics, comedy, and tragedy, *The Faerie Queene* shows the many different possibilities for thinking about how Renaissance readers viewed the relationship between poetry and social identity. This poem is thus a fascinating window into Renaissance society even as it explores issues still relevant today, from questions about female agency to religious prejudice to class and social conflict. Students will be offered guidance in developing their own projects to explore *The Faerie Queene*, and the focus of the class discussions will be determined by student interests**.** **Prerequisite(s):** Six English courses or instructor's permission. **CC:** WS

EGL 405 - Sr. Seminar (Winter):

Course Units: 1.0 **Prerequisite(s):** Six English courses or instructor's permission. **CC:** WS

EGL 406 - Sr. Seminar (Spring):

Course Units: 1.0 **Prerequisite(s):** Six English courses or instructor's permission. **CC:** WS **ISP:** AFR, AMS, GSWS

EGL 490 - English Independent Studies 1

Course Units: 1.0 **(TBD: Staff)** Directed reading and research on arranged topics. By permission of department chair, after a petition submitted in the fifth week of the previous term.

EGL 491 - English Independent Studies 2

Course Units: 1.0 **(TBD: Staff)** Directed reading and research on arranged topics. By permission of department chair, after a petition submitted in the fifth week of the previous term.

EGL 496 - English Senior Thesis 1

Course Units: 0.0 **(TBD: Staff)** Two-term senior thesis. For use by ID English majors who do not meet the requirements for an English Honors thesis but who are required to complete a two-term interdepartmental thesis by their other ID department.

EGL 497 - English Senior Thesis 2

Course Units: 2.0 **(TBD: Staff)** Two-term senior thesis. For use by ID English majors who do not meet the requirements for an English Honors thesis but who are required to complete a two-term interdepartmental thesis by their other ID department. **CC:** HUL, HUM, WS

Environmental Science, Policy and Engineering

ENS 100 - Introduction to Environmental Studies

Course Units: 1.0 An introduction to environmental studies from a scientific, policy, and engineering perspective. This course covers human-environment interactions, with a focus on the impacts of human activities on natural systems such as climate, air, water, and species diversity and the ensuing environmental injustice. The course discusses sustainable solutions for how we can build systems that will support billions of humans and the natural world. Fieldwork during lab periods involves the investigation of local environmental problems and solutions. This course is intended for first- and second-year Environmental Science and Environmental Policy majors, but it is open to all students. **Corequisite(s):** ENS 100L **CC:** SCLB, GNPS **ISP:** ENS, STS

ENS 200 - Energy

Course Units: 1.0 Designed to acquaint the student with the many societal and technological problems facing the United States and the world due to the ever increasing demand for energy. **Corequisite(s):** ENS 200L **Lecture/Lab Hours** One lab per week. **ISP:** ENS

ENS 204 - Geographic Information Systems

Course Units: 1.0 An introduction to Geographic Information Systems (GIS) technology and its practical uses. Topics include history of GIS, geographic data types, primary data structures, system design, map coordinate systems, data sources, metadata, census data, geographic coding and address matching, digitizing, remote sensing imagery, measures of data quality, and needs assessment. An emphasis will be on hands-on instruction using GIS software (ArcView). Students will work with ArcView throughout the term to complete assignments and a class project. Focus areas include archeology, electric and gas utilities, surveying, health and human services, insurance, law enforcement and criminal justice, media and telecommunications, transportation, water and wastewater, and natural resources. The ultimate goal is to use the spatial component of data in conducting analysis and making decisions. **Prerequisite(s):** A good background in the use of modern computer software. **Corequisite(s):** ENS 204L **CC:** SET, GETS **Lecture/Lab Hours** Two class hours and two lab hours weekly. **ISP:** ENS, STS

ENS 206 - Sustainable Living

Course Units: 1 What can you actually do to live more sustainably? In this highly participatory class you will increase your awareness of how to live a more sustainable life and you will take action. You will implement a sustainability project on campus, you will play of (a) change, and you will change the minds through the writing and potential publication of an opinion editorial (Op-Ed). Toward these actions, you will examine the impact of what you eat, wear, waste and consume, how you live and even travel. You will question assumptions and behaviors, learn about the global

impact of your personal actions, and you will explore and expand your learning through guest speakers. **CC:** GCHF, WAC

ENS 208 - Waste Management and Recycling

Course Units: 1.0 This course will introduce students to various sources of solid waste materials including hazardous and nonhazardous waste, and biodegradable and non-biodegradable waste. Focus areas are overview of landfill systems, geosynthetics, geotextiles, geomembranes, geonets, single clay liner, single geomembrane liner, composite liner systems, leak detection and leachate collection, removal and treatment of leachate, and capping and closure systems. The recycling segment will explore natural resources of raw materials including origin and use. It will also investigate the potential and limitation for recycling of materials. The focus area will be various applications of recycling recyclable and nonrecyclable materials especially non-biodegradable waste. Discussion of methods of manufacture and compositions of such materials will concentrate on advanced industrial applications for the reuse of non-recyclable waste materials. Application areas include production of new materials, materials with superior qualities for special purposes, and materials with high level of resistance against certain environmental conditions. The course will also touch on the political aspect of recycling including consumer attitude and government incentives to encourage recycling. **Prerequisite(s):** ENS 100 or GEO 110 **CC:** SET, GETS **ISP:** ENS, STS

ENS 209 - Renewable Energy Systems

Course Units: 1.0 The study of renewable energy resources and the conversion technologies available to utilize them to meet society's energy needs. Topics include forms of energy; First and Second Laws of Thermodynamics; energy conversion and efficiency; sustainability; energy storage. Historical perspective on world and U.S. energy usage, conversion technologies, and energy resources. Fundamentals of the conversion processes and systems involved in the use of solar thermal and photovoltaic, wind, bioenergy, geothermal, thermoelectric, hydro and ocean technologies. The use of hydrogen as a fuel and technologies to produce and use it. Economic and environmental issues relevant to renewable energy resources. Class will be supplemented with laboratory demonstrations and field trips to visit existing renewable energy systems. **Prerequisite(s):** MER 231 or PHY 122 **Corequisite(s):** ENS 209L **CC:** SET **ISP:** ENS, STS

ENS 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on earth and is a vital source of water for household, industrial, and agricultural uses worldwide. The well-being and prosperity of human civilization requires the sound stewardship and sustainable use of our groundwater supplies. In addition to serving as an essential resource for humanity, groundwater plays a central role in many environmental and geologic processes, including the maintenance of river flows between rainfall events, the occurrence of earthquakes, and the genesis of certain types of ore deposits and landforms. Groundwater is also a key consideration in many engineering operations such as the construction of dams and tunnels and the assessment of landslide and land subsidence risk. Groundwater hydrology is a highly interdisciplinary field that brings together the geologic and environmental sciences with engineering. This course will begin by exploring the physical properties of groundwater and the geologic media through which it flows, the physical laws that govern groundwater flow and transport, and techniques for modeling groundwater flow patterns. The mid-part of the course will focus on the engineering aspects of groundwater, covering topics such as the hydraulics of pumping wells, the transport of contaminants within aquifers, the remediation of contaminated aquifers, and well-drilling technology. Later we will cover the role groundwater plays in geologic processes and the role of geology in determining groundwater chemistry and quality. We will also discuss the connections between groundwater and human health and the importance of groundwater in the global food supply. Students will leave this course with the fundamental knowledge needed to begin answering scientific and engineering questions in the fascinating world of groundwater hydrology. **Cross-Listed:** GEO 210 **Prerequisite(s):** ENS 100 or any GEO course numbered 110 or higher. **CC:** GDQR, GETS, GNPS **Lecture/Lab Hours** One lab per week. **ISP:** ENS

ENS 215 - Exploring Environmental Data

Course Units: 1.0 Understanding how the Earth and environment works requires the careful analysis and interpretation of scientific data. Increasingly, the limitations to our understanding lie not in the availability of data, but rather in our ability to analyze and find meaning in it. Deriving insight from environmental data, in particular large and complex datasets, requires new tools, methods, and ways of thinking. In this class we are going to learn how to code in the programming language R and use it to analyze environmental data in order to better understand the Earth's systems. This course will feature a hands-on classroom with programming and data analysis occurring interactively during the class. Students will learn how to analyze and visualize large datasets and how to write code, while also covering interesting components of environmental and Earth sciences. **Prerequisite(s):** Any SET or SCLB. **CC:** SCLB, QMR, GDQR **Lecture/Lab Hours** Weekly lab required. **ISP:** ENS

ENS 222 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** MLT 209 **CC:** LCC, SET, HUM, HUL, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

ENS 234 - No Nonsense Sensors

Course Units: 1 Humans sense. They use their senses to monitor their surroundings. The basic five human senses are sight, hearing, smell, taste, and touch, and the sensory organs humans use to do these functions are the eyes, ear, nose tongue, and skin. Humans have had a long history of fascination with building devices that do sensory tasks. These are sensors, and unlike human sense, they are sleepless by design. The use of sensors has recently exploded. Sensor applications have penetrated many fields such as consumer products, healthcare, communication, transportation, industrial processes, sports, security, space, military, and the environment, to name a few. The presence of sensors is all around us in almost everything we use and come across in our daily life. Starting with smartphones, passing through sensor-activated lights in hallways, and ending with remotely sensed images that we receive from satellites orbiting Planet Earth from outer space. Sensors have invaded every aspect of human life and are predicted to be so pervasive in many extraordinary applications that will significantly enhance humans" quality of life. This course is designed for students interested in learning more about sensors and their human applications i adding a level of convenience never thought possible before. **CC:** SET, GETS **ISP:** ENS, STS

ENS 242 - Comparative Climate Change Politics

Course Units: 1 This past year we have seen historic temperature records and heatwaves across the globe, the impacts of wildfires around the country and locally, and periods of drought and
extreme storms in different areas. These have been attributed to or amplified by anthropogenic climate change, which is one of the biggest challenges facing society in
the 21 st century. This course examines why climate change is such a "wicked problem", and why it is so difficult to address effectively. The barriers to addressing climate change are not just technical and scientific, but also political and social. Thinking about a future where we as a society mitigate the worst impacts of climate change this century, and adapt to other impacts entails navigating different political systems around the world and balancing various geopolitical and economic interests. Through this course, we will examine how these factors shape or constrain efforts to address climate change in Western Europe, the United States, China, India, and other parts of the world. We will also examine how climate change is impacting human life and security in these countries and other parts of the world, and how it may amplify existing inequalities and other crises. **ISP:** ENS

ENS 247 - Sustainable Infrastructure

Course Units: 1.0 Infrastructure is the backbone of nations. It is a society's inventory of systems and facilities that allow it to function properly and smoothly. This includes, but is not limited to, roads, bridges, tunnels, dams, transit,

waterways, ports, aviation, pipelines, transmission lines, rail, parks, and public buildings such as schools, courts, hospitals, and recreational and sport facilities. Infrastructure involves services such as energy, water supply, wastewater treatment, power and gas distribution grids, waste collection, and sewer disposal. Major advances in technology resulted in digital infrastructure that includes communication networks, signal transmission towers, data centers, information repositories, servers/computers, and the Internet. This course explores the progress humanity achieved in developing infrastructure facilities and the present move towards sustainability. Methods, materials, processes, technologies, practices, and operations required to maintain a healthy environment and efficient infrastructure will be examined. The intersection between policies necessary for sustainable infrastructure and political, economic, social, societal, and cultural factors will be emphasized. **CC:** SET, GETS **Lecture/Lab Hours** Four class hours weekly. **ISP:** ENS, STS

ENS 252 - Geoenvironmental Applications

Course Units: 1.0 This course introduces field applications related to soil and water. It explores the natural characteristics and testing of soil as a construction material and as a bearing layer. It covers seepage analysis, aquifers, and well fields. It details the components of containment systems for waste disposal to alleviate environmental pollution and contamination. It also presents the basics of water movement in closed conduits and in open channels, and the development of supply networks. For labs, students gain experience in utilizing industry-standard testing methods of the American Society for Testing and Materials (ASTM). Tests include soil classification, composition, flow and permeability, compaction, compressibility, strength, slope stability, and environmental geotechnology with focus on the Environmental Protection Agency's (EPA) design specifications. **Prerequisite(s):** MTH 112 or higher, and PHY 120 or higher. **Corequisite(s):** ENS 252L **CC:** SCLB **Lecture/Lab Hours** Three class hours and a weekly lab. **ISP:** ENS, STS

ENS 253 - Environmentally Friendly Buildings

Course Units: 1.0 Many energy consumption and adverse environmental effects are attributable to buildings and their use. In this course, through instructions, hands-on experience, computer simulation, and research, the students will become acquainted with the inner workings of the subsystems in buildings: foundations, framings, walls, sidings, roof, electrical systems, lighting, appliances, heating, air-conditioning, ventilation, indoor air quality, basement, crawl space, attic, water and moisture management; plumbing, flooring, finishes, furniture, insulation, xeriscaping, and LEED rating system. The students will become aware of indoor and outdoor environmental issues and the life cycle costs of the existing systems. They will also learn the latest science and technology to reduce the negative effect of these subsystems on the environment. Laboratory: hands-on experience with the above subsystems, site visits, Computer simulations, research, projects, and presentations. There are no prerequisites for this course and it is open to all students. **Corequisite(s):** ENS 253L **CC:** SET, GDQR, GETS, SCLB **ISP:** ENS, STS

ENS 263 - U.S. Environmental Policy

Course Units: 1 This course examines the emergence, development, and future directions of environmental policy within the United States. It covers early environmental policy achievements such as the Clean Air Act, the reasons for federal inaction on environmental policy since the 1990s, and new directions for policy action in the 21st century as society understands how to mitigate and adapt to climate change. **CC:** LCC, SOCS **ISP:** AFR, AMS, ENS

ENS 264 - Climate Communication

Course Units: 1 **Cross-Listed:** PSC 264

ENS 277 - The Water Paradox

Course Units: 1.0 Fresh water is tasteless, odorless, and colorless. These characteristics make water one of the most intriguing materials. It is a necessity for life. A paradox involves features or qualities of contradictory nature. Water is notorious with such qualities. Water is one of the cheapest materials yet it is the most precious commodity known to humanity. Water could be the source of peace and development yet it could be a reason for war and conflict. Water could be a force for good to generate hydropower yet unchecked or unregulated this force could be in the form of destructive floods. Water could be a weapon to combat desertification yet too much thereof could cause erosion and failures. Floods come with loads of mud and silt that charge river deltas and keep them fertile yet weaker floods result in lesser deposits that could threaten river deltas with sea attacks. Water has always been a main reason for people to settle the land yet a shortage thereof could force people to migrate and leave their homeland. This course shows the role water played in the past, is presently playing, and will play in the future in defining communities and societies. **CC:** SET, GETS **ISP:** ENS, STS

ENS 291 - Construction for Humanity

Course Units: 1.0 An interdisciplinary introduction to the technology of construction and the social uses of building by humans. The course will consider types of building materials and their application to domestic housing, castles, cathedrals, palaces, monuments, dams, bridges, tunnels, factories, and office buildings. **Cross-Listed:** HST 291 **CC:** SET, GETS **ISP:** ENS, STS

ENS 294 - Introduction to Urban Ecology

Course Units: 1 Introduction to Urban Ecology is an introduction to the interdisciplinary field of urban ecology, the study of the structure and function of the urban environment as an ecological system. This course explores the relationship between humans and their build environment, and the relationships between humans and other organisms in urban habitats. The location of sustainable city and urban ecology laboratory where nearly half of the city's land consists of natural ares, providing ample experiential learning opportunities. **CC:** SET, GETS, **ISP:** ENS, STS

ENS 295H - Environmental Science & Policy Two Term Honors Independent Project 1

Course Units: 0.0 **Prerequisite(s):** Union Scholar.

ENS 296H - Environmental Science & Policy Two Term Honors Independent Project 2

Course Units: 1.0 **Prereq/Corequisite(s):** ENS 295H

ENS 299 - Environmental Forensics

Course Units: 1.0 An interdisciplinary course that will present topics detailing the intersection between the environment, ethics, law, society, litigation, policy, economics, pollution/contamination, cleanup, testing, standards, and sustainability. Sources of environmental problems are usually related to emissions, pollution, contamination, and/or waste disposal. Whether the cause is intentional or non-intentional, natural factors or a man-made disaster, or due to normal operation or accident, a crisis ensues and cleanup becomes necessary. This inevitably leads to legal actions and litigations that rely on experts in conducting scientific investigations to establish the facts surrounding potential controversies. Topics discussed in the course include liability, environmental site assessment, insurance litigation, toxic torts, science tools, sampling & measurements, statistical analysis, chemical fingerprinting, contaminant transport models, and environmental forensic microscopy. The course will illustrate the above points using case studies. **CC:** SET, GETS, WAC **ISP:** ENS, STS

ENS 302 - U.S. Energy Policy

Course Units: 1 Transitions to zero-carbon sources of energy are a critical part of addressing climate change globally. Within various parts of the United States, this transition has been slow and involved a number of political conflicts. Fossil fuel corporations, energy interest groups, and several other actors have fought over the direction of energy policy, with these battles largely occurring at the state and local levels. This class explores these relationships and conflicts to understand the battles over a clean energy transition in the United States and the implications for addressing climate change. **Cross-Listed:** PSC 302 **CC:** SOCS **ISP:** ENS, STS

ENS 460 - Environmental Science & Policy Senior Seminar

Course Units: 1.0 This capstone course for the environmental science and policy program brings together the expertise and experience of all environmental science and policy seniors to study contemporary environmental issues, usually related to a single topic or small number of topics. Issues may include legal cases, legislation and regulation, application of technology to social problems, and national and global environmental policy. Class time may include discussion, debate, field trips, class presentations, and outside speakers. Research and presentation of findings will be stressed. **Prerequisite(s):** Senior standing; Environmental Policy or Environmental Science Major **ISP:** ENS

ENS 490 - Environmental Science & Policy Independent Study 1

Course Units: 1.0 Independent work on an environmental topic of particular interest under the direction of a faculty advisor. **Prerequisite(s):** Permission of the instructor.

ENS 491 - Environmental Science & Policy Independent Study 2

Course Units: 1.0 Independent work on an environmental topic of particular interest under the direction of a faculty advisor. **Prerequisite(s):** Permission of the instructor.

ENS 492 - Environmental Science Senior Research

Course Units: 1

ENS 493 - Environmental Science Research 1

Course Units:

ENS 494 - Environmental Science Research 2

Course Units:

ENS 495 - Environmental Science Research 3

Course Units:

ENS 498 - Environmental Policy Research 1

Course Units: 0.0 Senior-level research on an environmentally-related topic. Work may take the form of two independent study term projects, or as a two-term senior thesis. Topics are chosen in consultation with and conducted under the direction of the student's advisor. Thesis research must follow the guidelines of the host department. The

results of senior research are presented in the senior seminar. **Prerequisite(s):** Senior standing in the environmental studies program and permission of the instructor.

ENS 499 - Environmental Policy Research 2

Course Units: 2.0 Senior-level research on an environmentally-related topic. Work may take the form of two independent study term projects, or as a two-term senior thesis. Topics are chosen in consultation with and conducted under the direction of the student's advisor. Thesis research must follow the guidelines of the host department. The results of senior research are presented in the senior seminar. **Prerequisite(s):** Senior standing in the environmental studies program and permission of the instructor. **CC:** WS **Note:** Substantial writing is required (must satisfy WAC-WS requirements, for which WS credit is awarded).

GEO 115 - Intro to the Atmosphere

Course Units: 1 Weather and climate influence nearly every aspect of our lives, from tasks such as what clothes to wear to the spectacular sights of extreme events such as hurricanes and thunderstorms. However, human activities are increasingly altering the state of the atmosphere through the emission of greenhouse gasses and aerosols. In this course, we
will cover the foundational concepts of atmospheric science that are necessary to develop an intuitive understanding of weather and climate. We will then apply the basic principles
to explore the origins of extreme weather and global climate change. **Corequisite(s):** GEO 115L **CC:** GNPS **ISP:** ENS, STS,

MIN 206 - Sustainable Living

Course Units: 1 What can you actually do to live more sustainably? In this highly participatory class you will increase your awareness of how to live a more sustainable life and you will take action. You will implement a sustainability project on campus, you will play fo (a) change, and you will change the minds through the writing and potential publication of an opinion editorial (Op-Ed). Toward these actions, you will examine the impact of what you eat, wear, waste and consume, how you live, and even travel. You will question assumptions and behaviors, learn about the global impact of your personal actions, and you will explore and expand your learning through guest speakers. **Cross-Listed:** ENS 206 **CC:** GCHF, WAC

MIN 209 - The Injustice of Global Climate Change

Course Units: 1 The impacts of climate change disproportionally affect countries that have contributed the least to atmospheric greenhouse gas loading. Further, within all countries the impacts of climate change disproportionally affect the poor and ethnic minorities. This course will review the basis for the overwhelming scientific consensus that concludes that ongoing warming is not natural, and will focus on the degree to which the impacts of global warming affect underdeveloped countries. Students will prepare and submit policy briefs to policy makers at the federal, state, and/or local level. **Corequisite(s):** MIN 209L **CC:** SCLB, GDQR, GNPS, GSPE **ISP:** ENS

TAB 321T - Buenos Aries Mini-term

Course Units: **ISP:** GSWS, LAS

TAB 333T - New Zealand Mini-Term Abroad

Course Units: 1 **CC:** LCC **ISP:** ENS

Engineering

ESC 100 - Exploring Engineering

Course Units: 1.0 An introduction to engineering including fundamental topics core to engineering. The course includes a weekly design studio that emphasizes engineering design, teamwork, technical writing and ethics through several individual and team design projects. Not available to junior or senior engineering students. **Corequisite(s):** ESC 100L **CC:** SET, GETS **ISP:** STS **Note:** General engineering course common to more than one program.

ESC 104 - Geographical Mechanism Synth

Course Units: Early engineers relied on intuition and graphical techniques to design mechanisms throughout history, this course explores these graphical techniques. Many of these techniques are still in use today to provide insight into engineering problems and to solve contemporary challenges. The course also explores multiple techniques used to develop innovative mechanismdesigns. The course is appropriate for non-engineering, non-science, and engineering majors alike. As part of the course, students will identify a challenge they encounter and will be lead through the human centered design process to create a functional prototype of the solution. **CC:** GETS **ISP:** STS

ESC 224 - Frontiers of Nanotechnology and Nanomaterials

Course Units: 1.0 An overview of nanotechnology and nanomaterials including interdisciplinary perspectives from engineering, materials science, chemistry, physics, and biology with emphases in sensors and actuators, nanoelectronics, alternative energy, nanocomposites, polymers, biomaterials and drug delivery **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121; MTH 115; and CHM 101 or CHM 110H; or permission of instructor. **CC:** SET, GETS

ESC 324 - Advanced Topics in Nanoscience

Course Units: 1.0 In-depth coverage of micro and nanoscale microscopy, including scanning electron microscopy and atomic force microscopy and their related modes and diagnostics methods. The course will feature special topics in nanoscience/nanotechnology, such as nanochemistry and structure/property relationships in select nanomaterial systems and/or biological nanomachines, self-assembly of bionanomaterials, and use of nanomaterials for biological sensors. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 ; MTH 115; and CHM 101 or CHM 110; CHM 224 or ESC 224 or MER 213 ; or permission of instructor. **CC:** SET, GETS

Film Studies

FLM 201 - Documentary Filmmaking

Course Units: 1.0 For beginners to advanced, Documentary Filmmaking presents the foundations of non-fiction filmmaking: from camera and equipment use to interviewing techniques and storytelling strategies. While creating a short documentary on a subject of the student's choosing, participants will come to understand the interface between them and world around them through the filter of the camera. Students can work in a variety of documentary styles which are explained in class. These forms include the poetic, expository, observational and participatory form. The skills learned in this class are valuable across many disciplines and jobs which involve interpersonal relationships, media skills, research and working with subjects. **CC:** HUM **ISP:** FLM

FLM 202 - Digital Filmmaking

Course Units: 1.0 For beginners to advanced, Digital Filmmaking presents the foundations of fiction filmmaking: from lighting and camera work to editing, sound and working on set. In the first part of the course, students recreate scenes from well-known films. In the second part, students script and shoot their own short films. This class is appropriate for filmmaking newbies as well as for those who wish to deepen their understanding and practice of the craft. The skills learned in this class will help students gain a foundation in media skills increasingly in demand across many majors and in the job market. **CC:** HUM **ISP:** FLM

FLM 289 - The Essay Film

Course Units: 1 Deriving its meaning from the French essayer: to attempt, the essay film is an experiment in form and expression. Weaving together elements of fiction and documentary, the essay film foregrounds the subjectivity of the filmmaker and engages the viewer as participant and collaborator. Relying heavily on montage, the essay film often employs found footage as well as cinema verité techniques-where the camera acts as quasi-therapist, eliciting performances and confessions. Experimenting with form and method, students will produce weekly writings; visual exercises and an extended essay film. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. Must be completed prior to taking this course. **CC:** HUM, WAC **ISP:** FLM

FLM 303 - Cinematic Montage

Course Units: 1.0 For beginners to advanced, Cinematic Montage explores the inner workings of fiction and non-fiction films. What are the elements that create a film's style or genre? How is rhythm employed in filming and editing? What are the techniques Hollywood uses to get, as they put it, "butts in seats?" In this class we deconstruct and reconstruct the mechanics of the filmmaking craft as students practice filmmaking elements in fun, weekly assignments. No prior experience needed. This class is helpful to develop analytical and media-critical tools useful across many majors and increasingly important in the media-connected job market. The course counts toward the 6-course minor in Film Studies. **CC:** HUM

FLM 340 - Suspense! Hitchcock and the Thriller

Course Units: 1 Designed for students of all levels, learn how to structure and produce a suspense film in this fun, hands-on Film Studies course. Building from the work of suspense legend Alfred Hitchcock, Suspense! takes a critical approach to analyze andpractice the elements employed in successful suspense films. Weekly exercises will include recreations of iconic Hitchcock scenes and critical readings about Hitchcock's work. Finally, we'll work as a class to plan, shoot and edit a suspense thriller. Students will come away with an
understanding of the genre and a solid foundation in film equipment use. While the course concentrates on Hitchcock we will also look at other directors' techniques to help pull
Hitchcock's into critical focus. **CC:** HUM **ISP:** FLM

FLM 490 - Film Project or Internship 1

Course Units: 1.0 Film Studies Independent Study. May take form of independent film project. **Prerequisite(s):** At least two other film courses from the lists above and project proposal approved by the Program Directors. Also, upon consultation with Program Directors, a Film Studies-related internship may be arranged for credit toward the minor. **ISP:** FLM

FLM 491 - Film Project or Internship 2

Course Units: 1.0 Film Studies Independent Study. May take form of independent film project. **Prerequisite(s):** At least two other film courses from the lists above and project proposal approved by the Program Directors. Also, upon

consultation with Program Directors, a Film Studies-related internship may be arranged for credit toward the minor. **ISP:** FLM

FLM 492 - Film Project or Internship 3

Course Units: 1.0 Film Studies Independent Study. May take form of independent film project. **Prerequisite(s):** At least two other film courses from the lists above and project proposal approved by the Program Directors. Also, upon consultation with Program Directors, a Film Studies-related internship may be arranged for credit toward the minor. **ISP:** FLM

First-Year Preceptorial

FYI 100 - First-Year Inquiry

Course Units: 1.0 First-Year Inquiry engages students in the exploration of ideas and diverse perspectives through critical reading, thinking, and writing.

FYI 100H - Scholars Preceptorial

Course Units: 1.0 Engages students in the exploration of ideas and diverse perspectives through critical reading, thinking, and writing.

French

FRN 100 - Basic French 1

Course Units: 1.0 **(Fall, Winter: Staff)** Itrouction to this world language, with emphasis on communicative skills. for students who begin with no knowlege of French. **CC:** HUM, JWOL

FRN 101 - Basic French 2

Course Units: 1.0 Continued development of communicative skills in this world language. For students with approximately 1-2 years of high school French of its equivalent. **Prerequisite(s):** FRN 100 or two years of secondary school French. **CC:** LCCF, HUM, JWOL

FRN 102 - Basic French 3

Course Units: 1.0 More extensive comunicative skills in this world language for students with approximately 2-3 years of high school French or its equivalent. **Prerequisite(s):** FRN 101 or three years of secondary school French. **CC:** LCCF, HUM, JWOL

FRN 200 - Intermediate French 1

Course Units: 1.0 Strong development of all communicative language skills, based around film from the French-speaking globe, for students with approximately 4 or more years of high school French or its equivalent. **Prerequisite(s):** FRN 102 or equivalent. **CC:** LCCF, HUM, JWOL, JCHF

FRN 201 - Intermediate French 2

Course Units: 1.0 Intesive growth in all communicative language skills, based around film from the French-speaking globe plus a ground-breaking French language novel. For students who have completed FRN 200 or its equivalent in high school or elsewhere. **Prerequisite(s):** FRN 200 or equivalent. **CC:** LCCF, HUM, JWOL, JCHF

FRN 204T - The French Language Studied Abroad

Course Units: 1.0 **CC:** LCCF, JWOL **Note:** Fall term in Rennes

FRN 205T - The French Language Studied Abroad

Course Units: 1.0 **CC:** LCCF, JWOL **Note:** Fall term in Rennes.

FRN 206T - The French Language Studied Abroad

Course Units: 1.0 **CC:** LCCF, JWOL **Note:** Fall term in Rennes.

FRN 207T - The French Language Studied Abroad

Course Units: 1.0 **CC:** LCCF, JWOL **Note:** Fall term in Rennes.

FRN 208T - Contemporary France

Course Units: 1.0 See Terms Abroad program. **CC:** LCCF **Note:** Fall term in Rennes.

FRN 250T - The French Language Studied Independently Abroad

Course Units: 1.0 **CC:** LCCF

FRN 251T - The French Language Studied Independently Abroad

Course Units: 1.0 **CC:** LCCF

FRN 295H - French Honors Independent Project 1

Course Units: 0.0

FRN 296H - French Honors Independent Project 2

Course Units: 1.0 **CC:** HUM

FRN 300 - Modern France/La France actuelle

Course Units: 1.0 Studies of contemporary French culture through authentic material, texts, films, radio, and television broadcasts dealing with current historical, political, sociological, and aesthetic issues. **CC:** LCCF, HUM

FRN 301 - A Survey of French Literature 1

Course Units: 1.0 The evolution of French literature from the earliest writings through the age of Enlightenment. Readings of major works from each period to illustrate trends. **CC:** HUL, LCCF, HUM

FRN 302 - A Survey of French Literature 2

Course Units: 1.0 Selected works representing literature and society from the late eighteenth century to the present. Readings of works from each period to illustrate cultural, historical, and artistic trends. **Prerequisite(s):** FRN 201 , any 300-level or permission of instructor. **CC:** HUL, LCCF, HUM

FRN 303 - Advanced French

Course Units: 1.0 Advanced language training for students who have completed the term abroad in Rennes or who have had similar experience. Examination of finer points of grammar, stylistics, and phonetics. **Prerequisite(s):** FRN 204T or equivalent. **CC:** LCCF, HUM

FRN 304 - Studies in the French Caribbean

Course Units: 1.0 Exploration of how French colonialism has informed artistic expression in the French Antilles. Taking Martinique as a point of departure, we will examine how colonial and post-colonial subjects represent and are represented through literary, theatrical, and musical productions. Themes to include notions of negritude, creolite, and bilingualism, as well as issues of class and gender. **CC:** HUL, LCCF, HUM **ISP:** AFR, LAS

FRN 306T - Readings in French and Francophone Culture

Course Units: 1.0 See Terms Abroad Program. France and the French of today as reflected in selected literary works from various genres and periods. **CC:** LCCF **Note:** Fall term in Rennes.

FRN 307 - Negritude Movement: Point of Departure in Black African and Afro-Caribbean Literatures in French

Course Units: 1.0 This study of the Black diaspora in French in the 1930s examines a variety of political and literary strategies developed in reaction to French colonial policies before the era of official independences. We consider authors such as Cesaire, Damas, Senghor, Fanon, and Sartre to better understand how these writers represent influences on the literatures of decolonization and post-colonial identity. **Prerequisite(s):** FRN 201 , any 300-level or permission of instructor. **CC:** LCCF, HUM **ISP:** AFR, LAS

FRN 308 - Women on Top: Great Women Writers and Characters of French Narrative Fiction

Course Units: 1.0 French language women writers and the women they write about in their novels and short stories. Authors may include Claire de Duras, George Sand, Colette, Anne Hebert, Marguerite Yourcenar, Simone de Beauvoir, Marguerite Duras, Andree Chedid and Mariama Ba. Focus on cultural, historical and political positioning of both writers and their subjects. **CC:** HUL, LCCF, HUM **ISP:** GSWS

FRN 309 - Identifying Desire, Desiring Identity: French and Francophone Non-Narrative Literature

Course Units: 1.0 This course will explore French and Francophone theater and poetry through the lenses of identity and desire. We will in particular examine notions of self and of other as they are set in play through various dramatic

and poetic texts, including, but not limited to, those of Labe, Racine, Baudelaire, Tremblay, Cesaire, and Schwartz-Bart. **CC:** HUL, LCCF, HUM

FRN 311 - Studies in Francophone North America: Quebec

Course Units: 1.0 Exploration of the cultural, literary, and linguistic expressions from the province of Quebec, situating it in the historical and social context of the French-speaking Americas. Focusing on artistic expression from novels to film, we will examine the multiplicities of identities at play in the spaces of Francophone North America as we explore such themes as colonialism, bilingualism, and culturally informed demonstrations of self-determination, revolt, and accommodation. **CC:** HUL, LCCF, HUM

FRN 312 - What is French Cinema?/Qu'est-ce que le cinema francais?

Course Units: 1.0 This course moves from an introduction to the earliest examples of French and world cinema, to an in-depth study of widely recognized classics of French cinema, considered in chronological order from 1933 to 1985, so as to develop an appreciation for the history, genre, and particular theme(s) of each film, as well as its originality. Students will learn how to talk about and write analytical papers on the films according to critical, cultural, and technological considerations, in order to determine what, if anything, is particularly "French" about French cinema. The course is taught in English, but students taking the course for French credit will read all materials in French, and assignments will be written in French. **Cross-Listed:** MLT 215 **CC:** HUM, LCCF **ISP:** FLM

FRN 318 - From Witchcraft to Hysteria

Course Units: 1 What is the common thread between witches, mystics, and hysterics? All these categories were used to describe women from different periods who did not fit into the roles that society had planned for them. Considered strange, queer, and dangerous, they were either cast out outside of cities or locked up in asylums. What about these women made the rest of society so scared of them? What did they mobilize within their practices and bodies that others could not bear to look at or understand? In this class, we will explore these
questions through a series of fiction, films, and theoretical texts. **Prerequisite(s):** FRN 201 **CC:** LCC, HUM **ISP:** GSWS

FRN 400 - Whose Enlightenment?

Course Units: 1.0 Eighteenth-century France's philosophical tradition, focusing on debates over sex, race, class, education and revolution. Writers may include: Rousseau, Toussaint Louverture, Voltaire, Louise d'Epinay, Olympe de Gouges, Condorcet, Marie Antoinette, and Sade. **CC:** HUL, LCCF, HUM **ISP:** GSWS

FRN 401 - The Writers of Romanticism

Course Units: 1.0 Writers of personal and imaginative prose, poetry, and drama following the French Revolution. The beginning of Realism. **CC:** HUL, LCCF, HUM

FRN 402 - Sex Lives and Videotape: Casting Sexuality in French and Francophone Film

Course Units: 1.0 Analysis and critique of films whose focus is the "sexual orientation" of its characters. Films may include La Cage aux folles, Les Diaboliques, French Twist, Sitcom, Ma Vie en rose, Woubi Cheri. Theoretical and critical works by authors such as Michel Foucault, Monique Wittig, Simone de Beauvoir, Susan Hayward, Laura Mulvey, Sigmund Freud, and Kate Bornstein will inform our study of these films. Readings in both French and English. All films subtitled. **CC:** LCCF, HUM **ISP:** FLM, GSWS

FRN 403 - Studies in French Theater

Course Units: 1.0 Amours et Amities! Studies of French-language theater, tracing themes of multiple amours et amities as conceived for performance from the classical period to the present. How do loves and relationships take form; indeed, do we need a stage in order to show them? What limitations or possibilities related to loves and relationships do we take on as we give them expression and form, and what does the stage reveal about our own expressions? On our way to some answers, we will also work out the staging of some of these important and revelatory scenes. Course conducted in French. **CC:** HUL, LCCF, HUM

FRN 404 - Translating the French Text

Course Units: 1 In this course, we will learn about and develop our capacities in translating original French texts of various genres and difficulty levels into English, with the understanding that translation is both a skill and an art! Through reading, writing, and discussion, students will: become familiar with the translation environment; attain a solid level of proficiency through use of certain translation strategies; distinguish the capacities and nuances of machine-versus-human translation; recognize and produce various types of translation (literary, poetic, historical, socio-cultural, journalistic) **Prerequisite(s):** FRN 300-level course or permission of the instructor **CC:** HUL, LCCF, HUM,

FRN 407 - Quelle Chaleur?

Course Units: 1 This course pivots on international best-selling crime novelist, historian & archeologist Fred Varga's latest work, "Quelle chaleur allons-nous connaître? Quelles solutions pour nous nourrir?" The first author to receive the Golden Dagger Award (for the world's top crime novel each year) for 3 consecutive novels, Vargas is also a world authority on the Black Death. She now turns attention to the climate crisis, in France and the world in general. More importantly, she explores solutions to engage for surviving in a rapidly changing earth-scape. All readings and assignments in French. **Prerequisite(s):** Take FRN-300 or FRN-301 or FRN-302 or FRN-303 or FRN-304 FRN-306T or FRN-307 FRN-308 FRN-309 FRN-310 or FRN-122(FRN_122) or FRN-305T or FRN-311 or FRN-312 or FRN-313 or FRN-314; - Must be completed prior to taking this course. **CC:** HUL, HUM, LCCF

FRN 410 - War Stories; 100 Years of French Literature

Course Units: 1.0 This course focuses on works in French about war, from memories of the Napoleonic wars to World War II. We will examine the impact of war and conflict on the development of French history and culture, and we will analyze texts (literary, films, novels, short stories, comic books) in their historical and sociocultural context, so as to develop a comparative approach to textual analysis through the connecting theme of war and conflict. **CC:** HUL, LCCF, HUM

FRN 411 - The 20th Century Novel

Course Units: 1.0 Scandale! Exploration of significant writings from twentieth-century France that have been considered scandalous and scandal-making. Examination of these novels, particular blending of content and form, and interrogation of the various re-evaluations of identity and expression that they ask their reader to engage in. Explorations of these novels, questions of class, race, nationality, species, sex, and gender. Representative authors: Gide, Proust, Colette, Vian, Darieussecq. **Prerequisite(s):** One 300 or 400 level FRN course. **CC:** HUL, LCCF, HUM, WAC

FRN 421 - Histoire de la danse, Danse de l'histoire/History of Dance, Dance of History

Course Units: 1.0 Examination of Western European dance and dance texts as revelatory of broader historical and cultural patterns, with special analyses of dance as a key tool of nation-building (as with the court of Louis XIV) and/or

a central medium of artistic creation (as in 1920's Paris). Primary focus on France as creator, user, and potential abuser of dance's power, but some attention given other European models (Berlin, St. Petersburg, London). Readings from theoreticians, historians, and dance litterateurs (Moliere, Gautier, Cocteau). **Cross-Listed:** ADA 153 and MLT 211 **CC:** HUL, LCCF

FRN 430 - West African Oral Literature

Course Units: 1.0 West-African oral genres with a focus on tales and epics in their form and ideologies. Through a study of the oral literature of the region, we will explore the socio-cultural structures of ancient West Africa, their collapse through religious and colonial implications, and their vestiges in today's Africa. **Cross-Listed:** MLT 213 **CC:** HUL, LCCF, HUM **ISP:** AFR

FRN 431 - Voices of Francophone Literature from French-Speaking Countries and Territories other than France

Course Units: 1.0 The ways contemporary writers from former French colonies in West and North Africa and from the French-speaking Caribbean stress local, social, political, religious, and gender matters in their novels and short-stories. We also examine these writers' particular use of the French language according to local meanings and other strategies they develop to redefine post-colonial societies. Among selected writers we have Calixthe Beyala, Mariama Ba, Assia Djebar, Rachid Minouni, Patrick Chamoiseau, and Maryse Conde. **CC:** HUL, LCCF, HUM **ISP:** AFR

FRN 437 - Afterlives of French Slavery

Course Units: 1 This course delves into the resurfacing of slavery's role in shaping modern France and the French Caribbeans. From the 17th century to the Black Lives Matter protests of 2020, we'll examine how the slave trade, the abolition of slavery, and the Haitian Revolution created traumas still felt today in France and the Caribbean. We'll compare the roles of museums, monuments, justice, and literature in repairing the wounds of the past and ask whether justice is best served through the law, art, or literature. **CC:** HUL, HUM, LCC, WAC, JLIT, JCHF, JWOL **ISP:** LAS

FRN 489 - French Senior Project

Course Units: 1.0 The seminar will provide a forum in which a French or Francophone topic of current interest and importance is explored in depth. Students will gain experience in giving oral presentations and critically evaluating the written work of both established scholars and fellow students, and they must submit a paper to fulfill the senior writing requirement. **CC:** WS, LCCF

FRN 490 - French Independent Study 1

Course Units: 1.0 Individual directed readings in French literature. **Prerequisite(s):** At least one course at the 400-level and permission of the instructor.

FRN 491 - French Independent Study 2

Course Units: 1.0 Individual directed readings in French literature. **Prerequisite(s):** At least one course at the 400-level and permission of the instructor.

FRN 492 - French Independent Study 3

Course Units: 1.0 Individual directed readings in French literature. **Prerequisite(s):** At least one course at the 400-level and permission of the instructor.

MLT 211 - Histoire de la danse, Danse de l'histoire/History of Dance, Dance of History

Course Units: 1.0 Examination of Western European dance and dance texts as revelatory of broader historical and cultural patterns, with special analyses of dance as a key tool of nation-building (as with the court of Louis XIV) and/or a central medium of artistic creation (as in 1920's Paris). Primary focus on France as creator, user, and potential abuser of dance's power, but some attention given other European models (Berlin, St. Petersburg, London). Readings from theoreticians, historians, and dance litterateurs (Moliere, Gautier, Cocteau). **Cross-Listed:** FRN 421 and ADA 153 **CC:** HUL, LCC

MLT 212 - Sex Lives and Videotape: Casting Sexuality in French and Francophone Film

Course Units: 1.0 Analysis and critique of films whose focus is the "sexual orientation" of its characters. Films may include La Cage aux folles, Les Diaboliques, French Twist, Sitcom, Ma Vie en rose, Woubi Cheri. Theoretical and critical works by authors such as Michel Foucault, Monique Wittig, Simone de Beauvoir, Susan Hayward, Laura Mulvey, Sigmund Freud, and Kate Bornstein will inform our study of these films. Readings in both French and English. All films subtitled. **Cross-Listed:** FRN 402 **CC:** HUM, LCC

MLT 213 - West African Oral Literature

Course Units: 1.0 West-African oral genres with a focus on tales and epics in their form and ideologies. Through a study of the oral literature of the region, we will explore the socio-cultural structures of ancient West Africa, their collapse through religious and colonial implications, and their vestiges in today's Africa. **Cross-Listed:** FRN 430 **CC:** HUL, LCC **ISP:** AFR

MLT 215 - What is French Cinma?/Qu'est-ce que le cinma francais?

Course Units: 1.0 This course moves from an introduction to the earliest examples of French and world cinema, to an in-depth study of widely recognized classics of French cinema, considered in chronological order from 1933 to 1985, so as to develop an appreciation for the history, genre, and particular theme(s) of each film, as well as its originality. Students will learn how to talk about and write analytical papers on the films according to critical, cultural, and technological considerations, in order to determine what, if anything, is particularly "French" about French cinema. The course is taught in English, but students taking the course for French credit will read all materials in French, and assignments will be written in French. **Cross-Listed:** FRN 312 **CC:** HUM, LCC **ISP:** FLM

MLT 218 - From Witchcraft to Hysteria

Course Units: 1 What is the common thread between witches, mystics, and hysterics? All these categories were used to describe women from different periods who did not fit into the roles that society had planned for them. Considered strange, queer, and dangerous, they were either cast out outside of cities or locked up in asylums. What about these women made the rest of society so scared of them? What did they mobilize within their practices and= bodies that others could not bear to look at or understand? In this class, we will explore these questions through a series of fiction, films, and theoretical texts. **Cross-Listed:** FRN 318 **CC:** LCC, HUM, JCHF, JLIT **ISP:** GSWS

Geosciences

GEO 106 - Introduction to Oceanography

Course Units: 1.0 The oceans cover 71% of the planet, 97% of the earth's available water, and 50% of the planet's species, but more than 95% of the ocean remains unexplored. This course covers physical, chemical, and biological oceanography. The course involves an examination of plate tectonics, ocean currents and the forces driving them, the role of the oceans in climate change, coastal processes and sea level change, biological productivity, and the ocean fishing industries. **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 109 - Global Climate Change

Course Units: 1.0

Global climate change is the defining environmental issue of our time. The impacts of climate change disproportionally affect populations who have contributed the least to atmospheric greenhouse gas loading. This course will review the basis for the overwhelming scientific consensus that ongoing warming is not natural; topics include: the radiation balance of Earth, the role of greenhouse gases on Earth's surface temperature, atmospheric and oceanic circulation, and natural oscillators in the climate system. A significant portion of the course is dedicated to understanding natural climatic variability. Students will prepare and submit policy briefs to policy makers at the federal, state, and/or local level that outline ways to mitigate and/or adapt to climate change. Preference given to first and second year students. **Corequisite(s):** GEO-109L
CC: SET, GNPS **ISP:** ENS, STS

GEO 110 - Introduction to Geosciences

Course Units: 1.0 Examination of Earth materials and processes: How our dynamic planet works including plate tectonics, geologic age determination, processes that form the rocks we see at the Earth's surface, development of the stunning variety of landscapes we see, and other topics of contemporary interest including floods, underground water resources, coastal erosion, earthquakes, landslides, volcanoes, and climate change. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 110L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 112 - Environmental Geology

Course Units: 1.0 The increasing interplay between the environment and human activity has profound effects on our landscape and society. This course focuses on anthropogenic issues such as climate change, soil and groundwater contamination, traditional petroleum resource extraction and dependence, mineral and water resources, and alterative sources of energy. To understand how humans have perturbed the natural environment, it is critical to understand geologic principles and processes. The course also explores natural disasters including earthquakes, volcanoes, hurricanes, landslides, floods, and coastal erosion and their effects on different segments of society, as the impacts of natural disasters are affected by various socio-economic factors. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 112L **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 117 - Natural Disasters

Course Units: 1.0 An introduction to the geologic processes causing floods, earthquakes, volcanoes, landslides, and other natural hazards and how hazards affect people and society. The course will include discussion of major events in the geologic and historical record as well as future hazard potential. We will assess the risks humans face in different regions, including local hazards, our contribution to geologic hazards, and how we can minimize and cope with future events. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 117L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 120 - The Story of Earth and Life

Course Units: 1.0 An investigation of Earth's dynamic history and evolutionary changes over the past 4.5 billion years. Topics include impacts of climate change, the evolution of life, major changes in the nature of Earth's atmosphere and oceans, and for major mountain building events that have affected the continents as well as the evolutionary development of plant and animal life as recorded in the geologic record. Specific topics include the origin of life, mass extinctions of dinosaurs and other organisms, paleoclimate, and the geologic history of New York State. The link between geology, chemical cycles and life is highlighted, as is the relation of past biogeochemical changes to current global environmental change. Field trips during lab investigate local geologic history and the course may require a weekend field trip. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 120L **CC:** SCLB, GNPS, SET **ISP:** ENS, STS

GEO 160 - Environmental Challenges in the Mohawk Watershed

Course Units: 1.0 This courses in an introductory course that investigates the complex intersection of surface-water hydrology and society. Specific modules address hydrology in a changing climate, water quality, dams and the Erie Canal, invasive species and pathways, municipal drinking water, floods, and river-proximal development: all environmental problems on the Mohawk related to water and hydrology in the watershed. While the Mohawk Watershed is of local and regional interest, the issues and problems addressed in this course are applicable nationwide. They deal with how a changing climate affects surface-water hydrology, how our national infrastructure and the built environment has been stressed due to age, damaging extreme events and pollution. We explore how our relationship with rivers is changing. This course is intended for all students at Union College, but it will be of special interest to those students interested in water, especially in the context of rivers, climate change, water infrastructure, and urban planning and development. **Prerequisite(s):** Preference is fiven to first and second year students. **Corequisite(s):** GEO 160L **CC:** SCLB, GNPS, GETS, WAC **ISP:** ENS

GEO 201 - Stratigraphy and Depositional Environments of New York

Course Units: 1.0 Tectonic events revealed through the stratigraphy and inferred depositional environments of the lower Paleozoic sedimentary rock sequences in eastern New York. Stratigraphic and sedimentologic concepts are explored through weekly field studies and comparison with modern depositional systems. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 201L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS

GEO 202 - Geomorphology

Course Units: 1.0 Processes operating on and near the Earth's surface are responsible for the development of landforms, and the evolution of these landforms through time. This course covers erosional and depositional processes of glaciers, rivers, hillslopes, and wind, and the geochemical reactions responsible for the formation of soils and caves. These topics are covered within the context of the geologic evolution of the Mohawk Valley since the end of the last Ice Age. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 202L **CC:** WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS

GEO 203 - Lakes and Environmental Change

Course Units: 1.0 Modern limnology and the record of environmental change as recorded in the physical and chemical properties of lake water and lake sediments. Includes a term-long research project on two local lakes, and the interpretation of the proxy paleoenvironmental indicators contained in sediment cores from these lakes. **Prerequisite(s):** Any 100-level geosciences or biology course or ENS 100 **Corequisite(s):** GEO 203L **ISP:** ENS

GEO 205 - Active Tectonics

Course Units: 1.0 This course explores the dynamics of active plate boundaries and plate motions as revealed in plate margin deformation, earthquakes, volcanic activity, and metamorphism. Includes an introduction to stress and strain, deformation mechanisms, faults and folds, geochronology, and petrology of distinct rocks in convergent settings. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **ISP:** ENS

GEO 206 - Volcanology

Course Units: 1.0 Volcanic eruptions showcase the beauty, complexity, and destructive forces of nature. This course tackles the questions of why volcanoes erupt (a fundamental question without universal agreement!), where they erupt, how they erupt, how we predict eruptions, and the effects of eruptions on societies. Case studies include famous eruptions such as Vesuvius, Yellowstone, Hawaii, and Mt. St. Helens, as well as some volcanoes being researched by Union faculty and students in the Caribbean, Pacific Northwest, and Mexico. Students learn the different ways that volcanoes are monitored (seismic, gas emissions, hydrothermal waters, deformation). The course highlights ongoing current volcanic activity and monitoring and students engage in multiple role-playing exercises using data to forecast eruptions and deal with a volcanic crisis. Students will become more proficient in science communication and how to convey information to the public through videos, infographics, and other forms of media. This course will include a spring break trip to Kilauea volcano in Hawaii. All students must meet basic term abroad requirements and submit an application. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 206L **ISP:** ENS

GEO 207 - Stable Isotopes in Environmental Science

Course Units: 1.0 Stable isotopes have become a fundamental tool in many biogeoscientific studies, from reconstructing past climates to tracking animal migration or unraveling foodwebs and even to study the origin of life on Earth and possibly other planets. This course highlights the applications of stable isotopes in biological, ecological, environmental, archeological, and geological studies. Students learn the fundamentals of stable isotope biogeochemistry in order to understand the uses and limitations of this tool. This course starts with an introduction to the fundamentals of stable isotope geochemistry and then moves on to applied topics such as paleoceanography and paleoclimatology proxies, hydrology, sediments and sedimentary rocks, biogeochemical cycling, the global carbon cycle, photosynthesis, metabolism, ecology, organic matter degradation, pollution, and more. **Prerequisite(s):** Any geosciences, biology, or chemistry course or ENS 100 , or permission of the instructor. **Corequisite(s):** GEO 207L **CC:** WAC, GDQR, GNPS **ISP:** ENS

GEO 208 - Paleontology, Paleobiology, and Paleoecology

Course Units: 1.0 Nearly all species that have existed on Earth are now extinct and are only known through the fossil record. This course examines the evolution and history of life on Earth as interpreted from the fossil record. Topics include fossil preservation, taphonomy, ontogeny, diversity trajectories through geologic time, evolutionary mechanisms, extinction, paleobiology, paleoecology, and paleoclimate. Special emphasis will be placed on using fossils to interpret ancient environments as well as deciphering past climates. The course focuses on the fossil record of marine invertebrates, but major groups of vertebrates (such as dinosaurs) and plants are also covered. **Cross-Listed:** BIO 208 **Prerequisite(s):** Any geosciences or biology course or ENS 100 **Corequisite(s):** GEO 208L **CC:** SCLB **ISP:** ENS

GEO 209 - Paleoclimatology

Course Units: 1.0 Climate is fundamentally relevant to modern and ancient societies. Global warming is occurring today, and whether it is driven by human activities (e.g., CO2, CH4 emissions) or by natural climate cycles can only be determined by understanding natural climatic variability. Fortunately, there are many tools, and natural climatic records that can provide us with information on past climate (e.g. tree rings, ice cores from glaciers, and sediment cores from lakes and oceans). Obtaining, documenting and interpreting these records is the field of paleoclimatology, and it is the focus of this course. Past climate variability is used to highlight possible scenarios of future climate change. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 209L **CC:** SCLB **ISP:** ENS

GEO 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on Earth and serves as a vital resource that supports the economies and ecosystems of the world - including providing much of the irrigation water that grows our food, supplying drinking water to over 2 billion people, and sustaining surface water bodies and groundwater dependent ecosystems. With the world's groundwater resources threatened by intensive groundwater pumping, environmental and climate change, and the release of contaminants into the environment, there is a pressing need to better understand and manage this resource. Groundwater hydrology is a highly interdisciplinary field that brings together the geologic and environmental sciences with engineering. This course will begin by exploring the environmental and geologic factors that influence the occurrence and movement of groundwater. We will then delve into the physical laws the govern groundwater flow and learn how to model these flows. Later in the course we will cover the role of groundwater in a range of geologic and ecological processes. We will also cover engineering applications of groundwater such as the hydraulics of pumping wells, land subsidence, and the movement of contaminants within aquifers. Students will leave this course with the fundamental knowledge needed to begin answering the scientific and engineering challenges related to our groundwater resources. **Cross-Listed:** ENS 210 **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 210L **CC:** GDQR, GETS, GNPS **ISP:** ENS

GEO 220 - Mineral Science

Course Units: 1.0 Mineral science is foundational for other geology and environmental science courses, as well as many other scientific disciplines that encounter crystalline solids. This class provides students with a solid understanding of minerals, which are the building blocks of all rocks on this and every other planet, and provide most of our industrial resources, many building materials and precious gems. A successful student leaving this class will be able to identify most common minerals when they occur "in the wild" and be familiar with their internal structure and crystal chemistry. The practical use of state-of-the- art analytical techniques common to the study of solid materials is emphasized to elucidate the links between internal crystalline structure and macroscopic physical properties. Students will use the scanning electron microscope, the x-ray diffractometer and the polarizing light microscope. In addition to learning the fundamentals of mineral science, students will gain appreciation for the beauty and symmetry present in the natural world. **Prerequisite(s):** CHM 101 or equivalent and any 100-level geosciences course. **Corequisite(s):** GEO 220L **ISP:** ENS

GEO 295H - Geosciences Honors Independent Project 1

Course Units: 0.0

GEO 296H - Geosciences Honors Independent Project 2

Course Units: 1.0

GEO 300 - Glacial and Quaternary Geology

Course Units: 1.0 The transformation of snow to ice, the mass balance of glaciers, types of glaciers, and the processes that control glacier sliding, erosion, and deposition. Includes techniques commonly employed to date Quaternary deposits and an examination of the geologic record of the Ice Ages as recorded in glaciers, glacial deposits, and marine and lake sediments of the Quaternary period. Weekly labs document the geologic record of the last glaciation in exposures in the southern Adirondacks, central Hudson Valley, eastern Mohawk Valley, and northern Schoharie Valley. **Prerequisite(s):** Any 200-level geosciences course, or permission of the instructor. **Corequisite(s):** GEO 300L **ISP:** ENS

GEO 302 - Geochemical Systems and Modeling

Course Units: 1.0 Investigation of the Earth as a chemical system and using chemical tools to understand geologic processes. Topics include origin of the elements, formation and differentiation of the Earth, igneous processes, radioactive isotopes and radiometric dating, and geochemistry of near-surface waters and the oceans. Work includes theory, sample collection, sample preparation, chemical analysis using in-house equipment, and computer modeling of the using the acquired data. Includes readings and discussions of the contemporary geochemical literature. **Prerequisite(s):** CHM 101 or equivalent **Corequisite(s):** GEO 302L **ISP:** ENS

GEO 303 - Earthquakes and the study of the Earth's Interior

Course Units: 1.0 In this course students will learn about the various geophysical methods used to probe the Earth's interior. With a heavy focus on earthquakes and seismology, the course explores the question of how we learn about the Earth beneath our feet. Through the hands-on use of modern geophysical field equipment we will explore the deep and shallow structure of the whole earth. We will learn about finding geological resources and about the physical explanations for plate tectonics. We will also examine how radioactivity and heat flow within the earth can tell us about our warming climate. A common thread throughout the course is computer modeling, data acquisition, signal processing and associated uncertainties. By the end of the course, students will have a familiarity with the differences between the many geophysical surveying methods and the different cases in which they could be employed. **Prerequisite(s):** Any 100-level geosciences or physics course or ENS 100 **Corequisite(s):** GEO 303L **ISP:** ENS

GEO 305 - Global Biogeochemical Cycles

Course Units: 1.0 Biology, geology and chemistry are intricately linked to form the world around us. Biogeochemical cycles set the stage for life on Earth. This course explores the carbon, nitrogen, water, phosphorus, and sulfur cycles in the critical zone and oceans. The critical zone is the terrestrial layer that extends from the bedrock to the top of vegetation, and this course continues into estuaries and the open ocean. We investigate how biological (e.g., primary production, respiration), anthropogenic (e.g., urbanization, pollution) and geological processes (e.g., tectonics, rock weathering) influence the critical zone and oceans, and in turn how these cycles influence life and climate. Field studies focus on tropical marine biogeochemistry of coral reefs, mangrove forests, seagrass meadows, lagoons and estuaries. Course includes a required week-long field trip to a remote field station in Panama. There are additional costs associated with field trip expenses, but students can apply for travel assistance. All students must meet basic term abroad requirements and submit an application. This course is open to all students, but preference will be given to those with a declared major in geosciences, environmental science, chemistry, or biology. **Cross-Listed:** BIO 235 **Corequisite(s):** GEO 305L **Prereq/Corequisite(s):** Take a course from either BIO, CHM, GEO or ENS 100 . **CC:** WAC, WAC-R **ISP:** ENS

GEO 307 - Structural Geology

Course Units: 1.0 In Structural Geology we study the geometry and dynamics of deformed rocks, using detailed descriptions and kinematic analysis of field sites. If we wish to understand the formation of mountain belts, or their climatically controlled destruction, the relationship of one rock unit to another, or one mineral grain to the next is of fundamental importance. Students will acquire the tools necessary to describe and understand the geometry and dynamics of deformed rocks and the larger-scale orogenies they are a part of, with a practical focus on field work to understand the structural evolution of eastern New York. We will explore stress and strain, folding, faulting, cleavage formation, map interpretation, and the relationships between plate tectonic settings and crustal structure. There is a major emphasis on developing and sharpening of multi-dimensional reasoning skills. Students will also gain experience writing scientific reports which integrate observational data, field measurements, and the existing literature. In addition to several local field trips during lab, the course includes a weekend trip to explore key localities from the Taconic Orogeny in Massachusetts and Vermont. **Prerequisite(s):** Any geosciences course numbered 200 or higher, or permission of the instructor. **Corequisite(s):** GEO 307L

GEO 320 - Petrology of Igneous and Metamorphic Rocks

Course Units: 1.0 Petrology is the study of rocks and the conditions under which they form and evolve. This course will explore how the processes of melting and subsequent crystallization creates igneous rocks in different tectonic environments and how heat, pressure, and strain create metamorphic rocks. Emphasis will be on integrating different types of data (e.g. field observations, mineral assemblages, whole-rock geochemistry, mineral compositions) to understand the origin and evolution of rocks in igneous and metamorphic systems. Students will examine and characterize minerals, textures, and compositions of rocks in thin sections using a polarizing microscope, scanning electron microscope, and laser ablation inductively-coupled mass spectrometer. Rock sample suites studied could include those from Iceland, Montserrat, Mexico, New England, the Stillwater Complex (MT), and Dutchess County, NY. The course includes local field trips to see outcrops and collect samples on 2-3 weekend days to the Adirondacks, Catskills, and/or Vermont and Massachusetts. **Prerequisite(s):** GEO 220 **Corequisite(s):** GEO 320L **ISP:** ENS

GEO 355T - Living on the Edge

Course Units: 1.0 This course is a mini-term abroad. The field study of earthquakes, volcanoes, glaciers, and other hazards where tectonic plates collide and mountains form. Field studies focus on understanding the science behind geologic hazards that lead to catastrophic events and subsequent loss of life. Fieldwork is aimed at recognizing hazards, understanding the processes behind the hazards, and to see the role that society plays in mitigating these hazards. The study area alternates around the Pacific Rim between locations that include Peru (June), Alaska (June), and New Zealand (December). Fieldwork is preceded by organizational sessions on campus to prepare for field projects. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **ISP:** ENS

GEO 405 - Geosciences Senior Seminar

Course Units: 1.0 Senior capstone course required of all geosciences majors that integrates concepts from all disciplines of geology and requires students to engage in scientific discussions. The course covers current developments in the geosciences as reported in the primary literature. Students will critically read, present, and discuss recently-published articles. Students will also give oral presentations of their original thesis research. To improve their presentation skills, students will do extensive peer review and self-assessment. **Prerequisite(s):** Geosciences major and senior standing **CC:** WS

GEO 490 - Geosciences Independent Study 1

Course Units: 1.0 A program of independent study in a particular area of geology, not available through regular courses, under the supervision of a faculty member. **Prerequisite(s):** Permission of the instructor.

GEO 491 - Geosciences Independent Study 2

Course Units: 1.0 A program of independent study in a particular area of geology, not available through regular courses, under the supervision of a faculty member. **Prerequisite(s):** Permission of the instructor.

GEO 492 - Geosciences Independent Study 3

Course Units: 1.0 A program of independent study in a particular area of geology, not available through regular courses, under the supervision of a faculty member. **Prerequisite(s):** Permission of the instructor.

GEO 493 - Geosciences Independent Study 4

Course Units: 1.0 A program of independent study in a particular area of geology, not available through regular courses, under the supervision of a faculty member. **Prerequisite(s):** Permission of the instructor.

GEO 494 - Geosciences Independent Study 5

Course Units: 1.0 A program of independent study in a particular area of geology, not available through regular courses, under the supervision of a faculty member. **Prerequisite(s):** Permission of the instructor.

GEO 495 - Geosciences Thesis Research 1

Course Units: 0.0 Geological research under the direction of a faculty member. A minimum of two terms are required for honors. Only one term can be counted toward the two geosciences electives. **Prerequisite(s):** Permission of the instructor. **CC:** WS (satisfied by completion of GEO 496)

GEO 496 - Geosciences Thesis Research 2

Course Units: 2.0 **(TBD: Staff)** Geological research under the direction of a faculty member. A minimum of two terms are required for honors. Only one term can be counted toward the two geosciences electives. **Prerequisite(s):** Permission of the instructor. **CC:** WS

GEO 497 - Geosciences Thesis Research 3

Course Units: 1.0 Geological research under the direction of a faculty member. A minimum of two terms are required for honors. Only one term can be counted toward the two geosciences electives. **Prerequisite(s):** Permission of the instructor. **CC:** WS (satisfied by completion of GEO 496)

GEO 498 - Geosciences Research and Writing

Course Units: 1.0 One term of geological research under the direction of a faculty member. **Prerequisite(s):** Permission of the instructor. **CC:** WS

German

GER 100 - Basic German 1

Course Units: 1.0 Introduction to the language for students with no previous knowledge of German. Emphasis is on developing beginning speaking, listening, reading, and writing skills, supported by communicative practice and cultural studies. **CC:** HUM, GWOL

GER 101 - Basic German 2

Course Units: 1.0 Continuation of GER 100 **Prerequisite(s):** GER 100 or two years of secondary school German. **CC:** LCCG, HUM, JWOL

GER 102 - Basic German 3

Course Units: 1.0 Continuation of GER 101 , with introduction of readings. **Prerequisite(s):** GER 101 or three years of secondary school German. **CC:** LCCG, HUM

GER 200 - Intermediate German 1

Course Units: 1.0 Strong development of all communicative language skills for students with previous German language experience or its equivalent. **Prerequisite(s):** GER 102 or equivalent. **CC:** LCCG, HUM, GWOL

GER 201 - Intermediate German 2

Course Units: 1.0 Continuation of extensive grammar review, vocabulary building, conversation, and composition based on more advanced cultural and literary texts. **Prerequisite(s):** GER 200 or equivalent. **CC:** LCCG, HUM

GER 202 - Advanced German

Course Units: 1.0 Mastery of the spoken and written language, with an emphasis on the finer points of grammar, style, and colloquial expression. **Prerequisite(s):** GER 201 or equivalent. **CC:** LCCG, HUM

GER 204T - German Language and Culture Studies Abroad

Course Units: 1.0 See International Programs. **CC:** HUM, LCCG, JWOL

GER 205T - German Language and Culture Studies Abroad

Course Units: 1.0 See International Programs. **CC:** HUM, LCCG, JWOL

GER 206T - German Language and Culture Studies Abroad

Course Units: 1.0 See International Programs. **CC:** HUM, LCCG, JWOL

GER 207T - German Language and Culture Studies Abroad

Course Units: 1.0 See International Programs. **CC:** HUM, LCCG, JWOL

GER 250T - The German Language Studied Independently Abroad

Course Units: 1.0 **CC:** HUM, LCCG

GER 251T - The German Language Studied Independently Abroad

Course Units: 1.0 **CC:** HUM, LCCG

GER 296H - German Honors Individual Project 2

Course Units: **CC:** HUM

GER 300T - German Culture & Society

Course Units: 1.0 (Also MLT-238T) See International Programs. An introduction to the cultural history of German speaking Europe. **Prerequisite(s):** GER 201 or permission of the instructor. **CC:** HUM, LCCG, JCHF, JLIT, WAC **Note:** Spring term in Freiburg/Berlin.

GER 301 - German Culture and the Professions

Course Units: 1.0 Focus on business oriented linguistic competence (certification possible) and cultural sensitivity, combined with an introduction to the economic history of Germany 1945-present day. **Prerequisite(s):** GER 201 or permission of the instructor. **CC:** LCCG, HUM

GER 302 - Topics and Themes in German Prose

Course Units: 1.0 Selected works representing literature and society from the late eighteenth century to the present. Readings of works from each period to illustrate cultural, historical, and artistic trends. **Prerequisite(s):** GER 201 or permission of the instructor. **CC:** HUL, LCCG, HUM **ISP:** FLM

GER 303 - Topics and Themes in German Drama

Course Units: 1.0 Theory and practice of German theater from the Enlightenment to the Present. **Prerequisite(s):** GER 201 or permission of the instructor. **CC:** HUL, LCCG, HUM

GER 304 - Once Upon a Time: German Fairy Tales, Folklore, and Fantasy

Course Units: 1.0 Exploration of the genre and tradition of the German Fairy Tale, its reception within various cultural frameworks, and its influence on later literature of the nineteenth, twentieth and twenty-first centuries, with special focus on identifying aesthetic, sociological, psychological, and psychoanalytical implications and gender issues. The Grimm Brothers' Kinder- und Hausmarchen (and their revisions in popular and literary culture) will provide a basis for discussing the fairy tale's role in culture and its continued vitality within the different cultural frameworks of classical, romantic, and modern folklore and fantasy storytelling. **Prereq/Corequisite(s):** GER 201 or permission of the instrucutor. **CC:** HUL, LCCG, HUM, WAC

GER 305 - Topics and Themes in German Poetry: Love, Songs and Love Songs

Course Units: 1 Students in this advanced intermediate course will increase their written and spoken language proficiency through an examination of the "love song" in the German language. Students will engage critically with the concept "German love songs," in part guided by the questions "what is German?" "what is love?" and "what are songs?" The tradition of nineteenth-century German Art Song, perhaps the most well known songs about love in the German language, will form the basis for an examination of diverse articulations of "love" in this course in a variety of media, from medieval up to contemporary. **Prerequisite(s):** GER 201 or instructor permission. **CC:** LCC

GER 306 - Twentieth and Twentifirst Century German Literature

Course Units: 1.0 Representative works by major writers, read as expressions of concern about their times. **Prerequisite(s):** GER 201 or permission of the instructor. **CC:** HUL, LCCG, HUM

GER 307 - East German Culture

Course Units: 1.0 This course offers an overview of life in East German socialism, with a focus on cultural, societal and political themes. Centrally, we consider the ways the both literature and film became essential outlets for cultural expression in the GDR, as well as the constraints placed upon such expression. Moreover, we devote time to examining political and social topics affecting cultural production and consumption in the GDR (known as a quintessential "Leseland" - country of readers). Our materials span the critical to the celebratory, and the sober to the comical, capturing important 'snapshots' of this small, short-lived (1949-1990), yet vital country. **Prerequisite(s):** GER 201 **Corequisite(s):** GER 201 or permission of instructor. **CC:** HUL, LCCG, HUM, JCHF, JLIT, JWOL

GER 334 - Femme fatales? Women in 19th and 20th Century German Culture and Society

Course Units: 1.0 An examination of female sexuality as one of the central controversies of modern German culture. In addition to analyzing cultural artifacts (plays, films, paintings), we will discuss such diverse social phenomena as the Women's movement, morality crusades, psychoanalysis, and sexology. **Cross-Listed:** MLT 234 **Prerequisite(s):** GER 201 **CC:** HUL, LCCG, HUM

GER 335 - Voices from Abroad: German Exile Culture, 1933-1990

Course Units: 1.0 This course, taught in translation, is designed for both Germanists and other students of literature interested in exploring notions of exile and the particular cultural artifacts, including novels, films, essays and poetry, that bear witness to the struggle of artists exiled from WWII Germany and Austria. The class additionally examines texts by current emigres to Germany and incorporates theoretical assessments of exile, considering works by Said, Milosz and others. **Cross-Listed:** MLT 235 **Prerequisite(s):** GER 201 or permission of the instructor **CC:** HUL, LCCG, HUM

GER 336 - The Thrill of Victory: Reading German Sports and Culture

Course Units: 1.0 This course traces the ways that Sports have reflected and influenced German culture through the 20th century, analyzing links between athleticism and conceptions of gender, nationhood, individuality and race set out in literary texts, films, and visual arts. Exploring notions of victory, physical perfection, and spectatorship, we will consider works by some of Germany's greatest authors and artists, including Kafka, Schnitzler, Brecht, Riefenstahl, Kirschner and Handke. **Cross-Listed:** MLT 336 **Prereq/Corequisite(s):** GER 201 or permission of the instructor. **CC:** HUL, LCCG, HUM

GER 337 - Flashy Erotics to Forbidden Laughter: German Cabaret through the 20th Century

Course Units: 1.0 This course explores the German "Kabarett," a dramatic form essential to German culture throughout the 20th Century. Very versatile, cabaret throughout Germany's history was at times didactic, subversive, raunchy, witty, extravagant and sharply critical. We examine cabaret's development in contexts ranging from Weimar and Vienna, to Nazi and Concentration Camp forms, to East and West German political cabaret, and contemporary forms, considering the institutions and figures that shaped cabaret over time. **CC:** HUL, LCCG, HUM

GER 338 - Poetry, Performance, Protest & Power: A History of Twentieth-Century Germany

Course Units: 1.0 This course explores the legacy of 20th century German literature and cultural history through its poetic tradition of performance and protest, while analyzing the political, social, and cultural climate and the shifts in understandings of gender, race, class and generational relations during this critical century in contemporary German history. **Cross-Listed:** MLT 236 **CC:** HUL, LCCG, HUM **ISP:** GSWS

GER 339 - The Holocaust in Film: Cinematic Treatments of Violence, Trauma and Memory

Course Units: 1.0 The course examines cinematic representations of the Holocaust in the films of German, German-Jewish, and other European filmmakers. Comparing and contrasting a variety of film genres and cinematic techniques, we explore fundamental questions about the relationships between art and history, representation and experience and memory and responsibility. By considering theoretical and historical readings as well, we situate the films within

significant intellectual and historical contexts. **Cross-Listed:** MLT 339 **Prerequisite(s):** GER 201 or permission of the instructor. **CC:** HUM, LCCG, JLIT **ISP:** FLM

GER 340 - Beyond Bedtime Stories: Retelling the Tales of the Brothers Grimm

Course Units: 1.0 This course Investigates the folk and fairy tales of the Brothers Grimm in literature and film, as well as in their cultural, historical, social and ideological contexts. Specific focus is on the "retelling" and "rewriting" of these tales -- both by the Brothers Grimm from older French and Italian tales and by Walt Disney and modern Hollywood -- in order to study the similarities and differences in narrative structures, themes, and layers of meaning, as well as the implications such retellings have on social and familial relationships, class structure, race relations, the phenomenon of nation building, the performance of gender and sexuality, orientalism and consumerism. **Cross-Listed:** MLT 239 **Prerequisite(s):** GER 201 or permission of the instructor if student seeking GER credit. **CC:** HUL, HUM, LCCG **ISP:** GSWS

GER 341 - Grounding in German Texts

Course Units: 1 This course will explore an array of perspectives implied by the term "ground" and how these perspectives define the human relationship to the world. The ground offers a complicated and sometimes controversial focal point for a consideration of human activity. Many possible correlates of "ground" in German-the terms "Grund," "Boden," and "Erde," for example-include semantic fields that extend to reason, basis, territory, soil, earth, and world. Through the examination of perspectives ranging from metaphorical, to philosophical, to material, we will investigate how the ground functions in diverse contexts, forming at times the basis for human exceptionality, becoming the great unifier of organic and inorganic matter, and finally setting the scene for a decentering of an anthropocentric understanding of the world. Readings and discussion in English. **Prerequisite(s):** GER 201 or instructor permission

GER 401 - Meeting the Other: Migration and Multiculturalism in Contemporary Germany

Course Units: 1.0 This course studies post-World War II German cultural and literary history through the lens of migration. How are memories of migration included (or excluded) in national histories? By analyzing recent cultural productions by minorities (literature, music and films) with respect to national, cultural, and sexual self-representations in the context of social and political developments, this course will contextualize controversies and relate specific events to broader questions of economic globalization, the recruitment of "guest workers," refugees and border regimes, xenophobia and racism, citizenship legislation, education and national identity, religion and ritual, media and popular culture. **Prerequisite(s):** Any 300-level course or permission of the instructor. **CC:** HUL, LCCG, HUM

GER 402 - German Film Studies

Course Units: 1.0 Needs to have completed GER 201 or the equivalent; contact any German professor for permission if you have experience in the language. **Prerequisite(s):** Any 300-level course or permission of the instructor. **CC:** HUM, LCCG, JWOL **ISP:** FLM, GSW

GER 403 - Shoah: Literary, Artistic and Filmic Representations of the Holocaust

Course Units: 1.0 Comparing and contrasting works of German and German-Jewish writers. **Prerequisite(s):** Any 300-level course or permission of the instructor. **CC:** LCCG, HUM, HUL

GER 404 - Kafka and Mann: German Modernism

Course Units: 1 Referred to by some as "similar opposites", Franz Kafka and Thomas Mann represent the poles of modernism in European literature as perhaps no two authors do. Contemporaries for a time, the pair read each other's works, and - as quite different in style as their writings were -- expressed great mutual admiration. Since their deaths, literary theorists have sought to understand European literary trends precisely through the comparison of Kafka and Mann. This course will examine selected works by the German-speaking Jewish author from Prague, Franz Kafka, noted for his understated wit and his gripping, often bizarre, nightmarish, portrayals of the human condition, alongside works by the German, Nobel Prize-winning author Thomas Mann, known for his intricate, at times deliberately overstated depictions of intellectual and artistic genius. Together, the two authors explored themes of sexuality, psychology, aesthetics, moral decadence, societal marginalization and death, drawing from references to visual arts and music. We will also examine selected cinematic renderings of these authors' works and lives. Taught in German with readings in German. **Prerequisite(s):** 300-level German course or instructors permission. **CC:** HUL, HUM, LCCG, JLIT, JWOL

GER 406 - The City in German Cineman

Course Units: 1 Even in its earliest forms, world cinema has taken as one of its primary tasks the portrayal of the city. The vibrancy, pathos, humor and mystery of urban life have provided both subject matter and vehicle for the aspirations and innovations of film directors worldwide. Ranging from the poetic and fanciful to the gritty and earthy, German cinema has captured the city - as both place and as concept, and in genres ranging from SciFi and crime drama to documentary and fantasy - as perhaps no other national cinema. During this course, we will come to know several iconic examples from German cinema, analyzing the various ways that the city features centrally in these film classics, spanning the 20th century. **Prerequisite(s):** GER 300-level course or permission of the instructor. **CC:** JCHF, JLIT, JWOL, WAC **ISP:** FLM

GER 489 - German Senior Writing Project

Course Units: 1.0 **CC:** WS, LCCG

GER 490 - German Independent Study 1

Course Units: 1.0 Individual directed readings in German literature. **Prerequisite(s):** At least one course at the 400-level and permission of the instructor.

GER 491 - German Independent Study 2

Course Units: 1.0 Individual directed readings in German literature. **Prerequisite(s):** At least one course at the 400-level and permission of the instructor.

GER 492 - German Independent Study 3

Course Units: 1.0 Individual directed readings in German literature. **Prerequisite(s):** At least one course at the 400-level and permission of the instructor.

MLT 234 - Femmes fatales? Women in 19th- and 20th-Century German Culture and Society

Course Units: 1.0 An examination of female sexuality as one of the central controversies of modern German culture. In addition to analyzing cultural artifacts (plays, films, paintings), we will discuss such diverse social phenomena as the Women's movement, morality crusades, psychoanalysis, and sexology. **Cross-Listed:** GER 334 **CC:** HUL, HUM

MLT 235 - Voices from Abroad: German Exile Culture, 1933-1990

Course Units: 1.0 This course, taught in translation, is designed for both Germanists and other students of literature interested in exploring notions of exile and the particular cultural artifacts, including novels, films, essays and poetry, that bear witness to the struggle of artists exiled from WWII Germany and Austria. The class additionally examines texts by current emigres to Germany and incorporates theoretical assessments of exile, considering works by Said, Milosz and others. **Cross-Listed:** GER 335 **CC:** HUL, HUM

MLT 236 - Poetry, Performance, Protest & Power: A History of Twentieth-Century Germany

Course Units: 1.0 This course explores the legacy of 20th century German literature and cultural history through its poetic tradition of performance and protest, while analyzing the political, social, and cultural climate and the shifts in understandings of gender, race, class and generational relations during this critical century in contemporary German history. **Cross-Listed:** GER 338 **CC:** HUL, HUM, LCC **ISP:** GSWS

MLT 237 - Of Ghosts and Demons: Encountering the Uncanny in German Literature

Course Units: 1.0 From ghost children, animated statues, ominous angels, and the walking dead to machine women, demons, and doppelgangers, German literature teems with things that go bump in the night. The course examines encounters with the supernatural as depicted throughout German literature, with special focus on Romanticism's fascination with das Unheimliche ("the uncanny"), in order to sketch the history of this tradition of fantastic literature in German, trace its origins, and present its main authors and defining features. Readings include works by Goethe, Kleist, the Brothers Grimm, Hoffmann, Hauff, Schnitzler, Kafka, Rilke, and Bachmann, as well as films by Murnau, Lang, and von Sternberg. **Cross-Listed:** GER 341 **Prerequisite(s):** GER 201 or permission of the instructor. **CC:** HUL, HUM, LCC

MLT 239 - Beyond Bedtime Stories: Retelling the Tales of the Brothers Grimm

Course Units: 1.0 This course Investigates the folk and fairy tales of the Brothers Grimm in literature and film, as well as in their cultural, historical, social and ideological contexts. Specific focus is on the "retelling" and "rewriting" of these tales -- both by the Brothers Grimm from older French and Italian tales and by Walt Disney and modern Hollywood -- in order to study the similarities and differences in narrative structures, themes, and layers of meaning, as well as the implications such retellings have on social and familial relationships, class structure, race relations, the phenomenon of nation building, the performance of gender and sexuality, orientalism and consumerism. **Cross-Listed:** GER 340 **Prerequisite(s):** None for MLT. GER 201 or permission of the instructor if student seeking GER credit. **CC:** HUL, HUM **ISP:** GSWS

MLT 267 - Disability in Film: Theoretical, Cultural and Cinematic Practices

Course Units: 1 The course examines recent and historical films representing disability in a range of contexts and perspectives. Comparing and contrasting a variety of film genres and cinematic techniques evidenced in both Hollywood and international cinema, we explore fundamental questions about the way disability is framed and understood in society. By considering theoretical and cultural readings tracking the development of Disability Studies, we situate the films within significant intellectual debates. **CC:** LCC, HUM, JLIT, JCHF, WAC **ISP:** AIS, FLM

MLT 336 - The Thrill of Victory: Reading German Sports (and) Culture

Course Units: 1.0 This course traces the ways that Sports have reflected and influenced German culture through the 20th century, analyzing links between athleticism and conceptions of gender, nationhood, individuality and race set out in literary texts, films, and visual arts. Exploring notions of victory, physical perfection, and spectatorship, we will consider works by some of Germany's greatest authors and artists, including Kafka, Schnitzler, Brecht, Riefenstahl, Kirschner and Handke. **Cross-Listed:** GER 336 **CC:** HUL, HUM

MLT 339 - The Holocaust in Film: Cinematic Treatments of Violence, Trauma and Memory

Course Units: 1.0 The course examines cinematic representations of the Holocaust in the films of German, German-Jewish, and other European filmmakers. Comparing and contrasting a variety of film genres and cinematic techniques, we explore fundamental questions about the relationships between art and history, representation and experience and memory and responsibility. By considering theoretical and historical readings as well, we situate the films within significant intellectual and historical contexts. **Cross-Listed:** GER 339 **CC:** HUM, LCC, WAC, JCHF, JLIT **ISP:** FLM

Greek

GRK 101 - Beginning Ancient Greek 1

Course Units: 1.0 Study of elementary Greek grammar with selected readings from classical authors. **CC:** HUM, JWOL, JCHF

GRK 102 - Beginning Ancient Greek 2

Course Units: 1.0 Continuation of GRK 101 . **Prerequisite(s):** GRK 101 or one year of secondary school Greek. **CC:** LCCK, HUM

GRK 103 - Greek Reading

Course Units: 1.0 Selected readings from the works of a variety of Greek authors. **Prerequisite(s):** GRK 102 or equivalent. **CC:** LCCK, HUM

GRK 230 - Homer: The Iliad

Course Units: 1.0 Readings in the Iliad, with relevant secondary readings on Greek epic, its place in the development of Greek literature, and its influence. **Prerequisite(s):** GRK 103 or equivalent. **CC:** HUL, LCC, HUM

GRK 231 - Homer: The Odyssey

Course Units: 1.0 A study of several books of the Odyssey, with relevant secondary readings on Greek epic, its place in the development of Greek literature, and its influence. **Prerequisite(s):** GRK 103 or equivalent. **CC:** HUL, LCC, HUM, WAC

GRK 235 - Plato

Course Units: 1.0 A study of several of the early dialogues in the original together with readings of others in translation. May be repeated with change in texts. **Prerequisite(s):** GRK 103 or equivalent. **CC:** HUL, LCC, HUM

GRK 243 - New Testament Greek

Course Units: 1.0 The foundational text of Christianity, the New Testament also represents a fascinating social and historical document, and, as such, offers an unparalleled glimpse into provincial life under the early Roman empire. A survey of the gospels, Acts, and the letters of Paul in light of these contexts. **Prerequisite(s):** GRK 103 or equivalent. **CC:** HUL, LCC, HUM **ISP:** REL

GRK 320 - Attic Prose

Course Units: 1.0 Readings from the major prose authors of Athens. May be repeated with change in author. **Prerequisite(s):** GRK 103 or equivalent. **CC:** HUL, LCC, HUM

GRK 331 - Herodotus and Thucydides

Course Units: 1.0 A study of several books of Herodotus and Thucydides with relevant secondary readings. **Prerequisite(s):** GRK 103 or equivalent. **CC:** HUL, LCC, HUM

GRK 333 - Greek Tragedy

Course Units: 1.0 Tragedies chosen from the works of the three great tragic poets of Athens, with relevant secondary readings. May be repeated with change in author or texts. **Prerequisite(s):** GRK 103 or equivalent. **CC:** HUL, LCC, HUM, WAC

GRK 337 - Greek Oratory

Course Units: 1.0 Readings of various Athenian orators, with secondary reading on Greek legal practice and rhetorical style. **Prerequisite(s):** GRK 103 or equivalent. **CC:** HUL, LCC, HUM

GRK 338 - Greek Lyric and Elegiac Poetry

Course Units: 1.0 Readings from Sappho, Archilochus, Solon, Pindar, and others. The traditions, evolution of the genre, social context and role of the poet will be considered. **Prerequisite(s):** GRK 103 or equivalent. **CC:** HUL, LCC, HUM

GRK 339 - Greek Comedy

Course Units: 1.0 Readings in the plays of Aristophanes. The criticism and theory, history, and social context of the comedies will be studied. **Prerequisite(s):** GRK 103 or equivalent. **CC:** HUL, LCC, HUM

GRK 490 - Greek Independent Study 1

Course Units: 1.0 Advanced individual study of a special author or subject, or of Greek prose composition. **Prerequisite(s):** Six courses in Greek or the equivalent.

GRK 491 - Greek Independent Study 2

Course Units: 1.0 Advanced individual study of a special author or subject, or of Greek prose composition. **Prerequisite(s):** Six courses in Greek or the equivalent.

GRK 492 - Greek Independent Study 3

Course Units: 1.0 Advanced individual study of a special author or subject, or of Greek prose composition. **Prerequisite(s):** Six courses in Greek or the equivalent.

GRK 497 - Greek Senior Project

Course Units: 1.0 One-term senior project. **CC:** WS

GRK 498 - Greek Senior Thesis 1

Course Units: 0.0 Independent reading and thesis in the field of Greek language and/or literature. **Prerequisite(s):** Permission of the department chair.

GRK 499 - Greek Senior Thesis 2

Course Units: 2.0 Independent reading and thesis in the field of Greek language and/or literature. **Prerequisite(s):** Permission of the department chair. **CC:** WS

Gender, Sexuality, & Women's Studies

GSW 100 - Introduction to Gender, Sexuality, and Women's Studies

Course Units: 1.0 This course is a transdisciplinary introduction to lesbian, gay, bisexual, transgender, and queer (LGBTQ+) studies. We will explore histories of sexualities; forms of systemic and structural oppression including heterosexism, homophobia, and transphobia and resistance to them; violence against LGBTQ+ people; intersectional queer activism throughout history; diverse experiences of sexuality, desire, and identity; and representations of LGBTQ+ people and experiences in literature, art, and popular culture. Our approach to class material will be intersectional, focusing on the connection between multiple identity components including, but not limited to, race, gender, class, and sexuality. **CC:** HUM, SOCS, JCHF **ISP:** AMS, GSW

GSW 101 - LGBTQ+ Studies

Course Units: This course is a transdisciplinary introduction to lesbian, gay, bisexual, transgender, and queer (LGBTQ+) studies. We will explore histories of sexualities; forms of systemic and structual oppression including heterosexism, homophobia, and transphobia and resistance to them; violence against LGBTQ+ people; intersectional queer activism throughout history; diverse experiences of sexuality, desire, and identity; and representations of LGBTQ+ people and experiences in literature, art, and popular culture. Our approach to class material will be intersectional, focusing on the connection between multiple identity components including, but not limited to, race, gender, class, and sexuality. **CC:** HUL, HUM, JCHF, JSPE

GSW 200 - Beyond Woman/Body/Nature: Ecofeminism, Systems Theories, and Social Activism

Course Units: 1 This course's exploration of ecofeminism, systemic theories, and social justice activism and practices analyzes how paradigms and historical inequalities have devalued both 'women' and 'nature,' leading to the oppression

and denigration of both. As a movement that draws linkages between environmental issues and intersectional feminist concerns, ecofeminism asserts that solutions to environmental problems require a feminist perspective, and contemporary feminist theory and practice require an environmental perspective. **CC:** SOCS, GLIT **ISP:** ENS

GSW 201 - Global Queerness

Course Units: 1 The question of global LGBTQ+ rights has increasingly become a point of conversation in the 21st century. Some countries argue LGBTQ+ rights violate their cultural norms, whereas others argue the human rights of LGBTQ+ persons should be a universal concern. This course will explore how issues of gender identity and sexual orientation continue to divide and unite the world by understanding cultural norms and practices, globalization, identity politics, religion, human rights, gender ideology, and the role of technology in shaping many of today's global queer communities and movements. **Prerequisite(s):** Take GSW-100 - Must be completed prior to taking this course.

GSW 213 - Sex and Power

Course Units: 1 Gender inequity affects everyone. Women continue to be underrepresented in politics, film, STEM, Fortune 500 companies, Silicon Valley, and almost everywhere important decisions are being made. We will pose intersectional questions about the relationship between gender, sex, and power and ask students to engage with the broader social,
cultural, and political implications of institutional misogyny and other forms of discrimination. We'll consider big picture questions related to women in politics, gender and
the economy, sexual equity, women's movements, transphobia, popular culture, and more. **CC:** HUM, SOCS, GCHF, GSPE **ISP:** GSW

GSW 300 - Transnational and Indigenous Feminisms

Course Units: 1

GSW 301 - Queer Science and Health

Course Units: 1 Gender identity and sexuality have long been topics of interest within medicine, psychology, psychiatry, behavioral genetics, and public health. This course will discuss scientific understandings related to gender identity and sexual orientation, bioethics, and strategies to improve health and well-being for diverse LGBTQ+ populations. Topics will include: nature vs. nurture and the 'gay gene'; gender affirming care; sex assignment and intersexuality; queer mental health and psychiatry; stigma and public health crises such as HIV/AIDs; inclusive health education; and health disparities. **CC:** HUL, SOCS, WAC, JSPE **ISP:** AMS, GSWS, STS

GSW 311 - Queering Masculinities

Course Units: 1 This course analyzes masculinity as a socially constructed concept to dispel myths about gender as innate or fixed. Students will interrogate how masculinities influence the self and behavior and analyze how masculinity promotes hierarchies of power and privilege in groups, organizations, and institutions. Most importantly, this class will discuss ways that toxic masculinity can be rewritten by 'queering masculinities' to work toward a more just society for all. In doing so, we will take the perspective of historically-marginalized masculinities, or those deemed 'queer' by societal norms. **CC:** HUL, SOCS, WAC, JSPE,

GSW 479 - Internship in Gender, Sexuality, and Women's Studies

Course Units: 1.0 An internship experience in local agencies, social services, law and media centers, women's advocacy groups, childcare centers, gay and lesbian organizations, with health care providers, and others. The goal is to develop

students' knowledge of and ability to analyze organizations that work on issues related to gender and sexuality in the Capital Region. **Prerequisite(s):** Sophomore standing and permission of the director.

GSW 490 - Gender, Sexuality, and Women's Studies Independent Study

Course Units: 1.0 **Prerequisite(s):** Faculty permission required.

GSW 495 - Capstone Course on Theories of Gender, Sexuality, and Women

Course Units: 1.0 A required interdisciplinary course designed as the culmination of the major or minor. This course reinforces and provides a coherent perspective on the major issues in gender studies and affords an opportunity to reflect upon the importance of the chosen major and/or minor focus in light of these issues. The topic of the capstone course varies from year to year; this year's will be Women's Rights in the United States in the fall and Feminist Film in the spring, cross-listed as EGL 304 and PSC 339 , respectively. **Prerequisite(s):** GSW 100 **CC:** SOCS, WAC, JCAD, JCHF **ISP:** AMS, GSW

GSW 498 - Gender Sexuality & Women's Studies Senior Thesis 1

Course Units: 0.0 A student directed two-term project culminating in a thesis representing the depth and breadth of knowledge attained in Gender, Sexuality, and Women's Studies interdisciplinary course work. Student theses in GSWS are usually advised by the current director, but can be advised by any faculty member in GSWS in consultation with the director.

GSW 499 - Gender Sexuality & Women's Senior Thesis 2

Course Units: 2.0 A student directed two-term project culminating in a thesis representing the depth and breadth of knowledge attained in Gender, Sexuality, and Women's Studies interdisciplinary course work. Student theses in GSWS are usually advised by the current director, but can be advised by any faculty member in GSWS in consultation with the director. **Prerequisite(s):** GSW 498 **CC:** WS

Biblical Hebrew

HBR 111 - Biblical Hebrew 1

Course Units: 1.0 Study of elementary Biblical Hebrew grammar with selected readings from the Hebrew Bible. **CC:** HUM

HBR 112 - Biblical Hebrew 2

Course Units: 1.0 Continuing study of elementary Biblical Hebrew grammar with selected readings from the Hebrew Bible. **CC:** HUM, LCCB

HBR 113 - Biblical Hebrew 3

Course Units: 1.0 Completion of the study of elementary Biblical Hebrew grammar with selected readings from the Hebrew Bible. **CC:** HUM, LCCB

HBR 490 - Biblical Hebrew Independent Study 1

Course Units: 0.0 Independent reading and thesis in the field of Greek language and/or literature. **Prerequisite(s):** HBR 113 or the equivalent.

Hebrew

HEB 100 - Basic Hebrew 1

Course Units: 1.0 This course introduces students to the Hebrew language and helps them with basic reading, speaking, listening and writing skills, with particular and basic attention given to Hebrew conversation, cultural diversity, and writing systems. **CC:** HUM, JWOL

HEB 101 - Basic Hebrew 2

Course Units: 1.0 Continuation of HEB 100 . **CC:** LCCH, HUM, JWOL

HEB 102 - Basic Hebrew 3

Course Units: 1.0 Continuation of HEB 101 . **CC:** LCCH, HUM, JWOL

History

HST 101 - History of the United States to the Civil War

Course Units: 1.0 Political, economic, and social developments in the colonial and early national periods. **CC:** SOCS **ISP:** AMS

HST 102 - History of the United States Since the Civil War

Course Units: 1.0 Political, economic, and social developments: continuity and change in modern America. **CC:** SOCS **ISP:** AMS

HST 105 - Comparative Global History to 1800

Course Units: 1.0 Provides a "bird's-eye" view of human history from the emergence of human "civilization" in the Fertile Crescent to the European conquest of the Americas. Surveys the comparative development of the world's continents, regions, and empires and investigates how expansion of the "human web" facilitated both cooperation and conflict among the world's peoples. Pays particular attention to environmental and ecological determinism, the influence of technology on economic growth, the rise of "portable" religions, and the interaction of culture and politics. **CC:** LCC, SOCS **ISP:** REE

HST 106 - Comparative Global History from 1800

Course Units: 1.0 This course examines the broad themes in world history from the 19th century onwards, beginning with the rise of the nation-state and the expansion of European and subsequently Japanese imperialism. It looks at the indigenous and global response to colonialism, the impulse of nationalism and the quest for modernity, as well as how race and gender came to be rethought and reconfigured going into the 20th century. We will examine the impact of the two world wars, the process of decolonization, the Cold War and the rise of globalization in the late 20th century. **CC:** SOCS **ISP:** REE

HST 107 - Africa to 1800

Course Units: 1.0 This course explores the history of Africa from the beginnings of humanity through the period of the trans-Atlantic slave trade. In it, we will examine political, social, economic and cultural changes in Africa, with particular focus on the relationships between local communities and the political elites who sought to rule them. This perspective will enable us to focus on the social dynamics of African communities and the daily activities of ordinary Africans, as well as on the political intrigues and roles of kings, chiefs, and merchants. **CC:** LCC, SOCS

HST 108 - Africa since 1800

Course Units: 1.0 This course is a survey of the African continent from 1800 to present. In this course, we will examine the political, social, economic and cultural changes in Africa during the nineteenth and twentieth centuries. Focus will be on key themes that span much of African history during this period including: slavery and the slave trade, European conquest and African resistance, the expansion of world religions (Islam and Christianity) in Africa, colonialism, the growth of nationalism, decolonization and the emergence of independent postcolonial states, and the challenges facing contemporary African states related to political instability and economic development. Given the enormous breadth and diversity of Africa, this course explores these themes by focusing on certain case study regions and countries, such as Francophone West Africa, Nigeria, the Congo region (Zaire), the East African coast and Arabic-speaking North Africa. **CC:** LCC, SOCS **ISP:** AFR

HST 109 - History of Sustainability

Course Units: 1.0 Sustainability. You now find the word just about everywhere. For more than a few people it has become the defining mission of their generation, an existential challenge that must be met for the survival of humanity. This is a course in thematic global history that explores the concept of sustainability from an historical perspective. Sustainability is not a new thing in human history or just a consequence of our environmentally-challenged present. Sustainability is part of our cultural inheritance with deep roots in the histories of Asia, the Americas, Europe, and Africa. Also, sustainability is not simply synonymous with environmentalism or climate change. It has always encompassed social realities like power, trade and commerce, cultural identities, human relationships to science and technology, and much more. Sustainability is a history of the societies we create and the values that define them, for good or ill. Ultimately, the history of sustainability is an opportunity to reflect on the nature of our humanity and the ideals that empower a just future. We will explore sustainability's history through primary texts, analyses of the concept across time and space, the study of sustainability challenges - successes and failures - in past societies, and contemporary realties faced by peoples across the globe, whether in the megacities of China and Latin America or the urban gardens of Detroit and the green housing cooperatives of Berlin. **CC:** LCC, SOCS, GCHF **ISP:** ENS

HST 113 - The Origins of American Society

Course Units: 1.0 The evolution of American society from its 17th-century origins through the aftermath of the Revolution. **CC:** SOCS **ISP:** AMS

HST 114 - The American Revolution

Course Units: 1.0 The causes and consequences of the American Revolution (1763-1815). **CC:** SOCS **ISP:** AMS

HST 116 - Age of Jackson

Course Units: 1.0 An examination of the United States in the turbulent period from 1815-1845, surveying the second party system, various utopian and reform movements, the cult of domesticity, and other wrenching transformations instigated by the market revolution. **CC:** SOCS **ISP:** AMS

HST 118 - Civil War and Reconstruction

Course Units: 1.0 An examination of the causes of the deepening sectional crisis; the political, economic, and social reasons for Southern secession; the move toward emancipation as a Northern war aim; the impact of the war on women and men, with special attention to geographic location, race, and class; and the experience of Reconstruction in the South. **CC:** SOCS **ISP:** AMS

HST 120 - The Emergence of Modern America, 1877-1918

Course Units: 1.0 The impact of urbanization and industrialization on the creation of the modern United States, 1890-1920. **CC:** SOCS **ISP:** AMS

HST 121 - The Depression and New Deal

Course Units: 1.0 The years between the end of World War I and the beginning of World War II witnessed not only a dramatic contrast between the prosperity of the 1920s and the Great Depression of the 1930s, but also a fundamental reordering of America's political system forged during Franklin D. Roosevelt's New Deal. This course will examine the crisis and transformation of the American economy and political system during the 1920s and 1930s, and their impact on Americans of all walks of life. **CC:** SOCS **ISP:** AMS

HST 122 - History of Fashion & Dress

Course Units: 1 This class examines period dress as a foundation of the designer's creation of costumes for the stage. We will be analyzing cultural influences of the exterior world, the psychology of dress, period movement, and the expression of self through choice of dress. Required study sessions will develop investigative methodology through hands-on work with vintage clothing and textiles. Throughout the term in-depth writing will be expected of the student to expand their understanding of the topic of historic dress as presented through the medium of professional research papers. **Cross-Listed:** ATH-123 **CC:** SOCS

HST 123 - Postwar America and the Origins of the Cold War

Course Units: 1.0 The stand-off between the United States and the Soviet Union permeated the politics and culture of the United States from the end of the Second World War through the early 1960s. This course will explore the origins of the Cold War, the terms on which it was fought, and the degree to which it imposed a political and cultural "consensus" on the United States. **CC:** SOCS **ISP:** AMS, REE

HST 124 - Monuments, Museums, and Movies: Introduction to Public History

Course Units: 1.0 This course will provide an overview of public history, defined as the presentation of history to a general public audience. Students will learn the theory, methods, and practice of public history in its various dimensions, including museums, monuments, historic sites, and films; they will explore the controversies that emerge in public history settings, including the battle over the Enola Gay, the Holocaust Museum, and commemorations of September 11th; and they will engage in a public history project in the Schenectady area. **CC:** SOCS **ISP:** AMS

HST 125 - Coming Apart?: America in the Sixties

Course Units: 1.0 A study of the breakdown of political and cultural consensus between 1956 and 1974. We will examine the degree to which counter-cultural and racial politics of the period successfully challenged the dominant political culture on issues of war, race, and gender. **CC:** SOCS **ISP:** AMS

HST 126 - Since Yesterday: United States History, 1974-2000

Course Units: 1.0 If the United States "came apart" in the 1960s, did it come back together in the 1970s and 1980s, or something else? This course looks at the emergence of new social movements (e.g., the women's and environmentalist movements), the rise of the "new right," the Reagan "revolution" in domestic policy, and American foreign policy from the fall of Saigon to the collapse of the Soviet Bloc. **CC:** SOCS **ISP:** AMS

HST 128 - The American Jewish Experience

Course Units: 1.0 Jews arrived in Britain's American colonies in 1654. In the space of 350 years their numbers increased dramatically and they made significant contributions to a plethora of areas in American society. Jews and Judaism also experienced significant changes through the encounter with the United States. But for all the gains in status and achievement, there are those who speak of a problematic future for American Jewry. **CC:** SOCS **ISP:** AMS, REL

HST 129 - History of Sports in America

Course Units: 1.0 Fields of battle (military, political, economic, and social) generally characterize the teaching of American history. Throughout times of conflict, however, it has often been the fields of American sport which have provided distraction, respite, and relief from these struggles. Meanwhile during times of peace, the fields of sport have contributed more than leisure and entertainment; they have reflected the American people's lives, hopes and dreams. Sport, in other words, has been and continues to be an active mediator in America's life, and a lens through which we can examine the broader contexts of American history. **CC:** SOCS **ISP:** AMS

HST 131 - African-American History 1

Course Units: 1.0 The purpose of this course is to help you better understand both the role of race and slavery in early American history and the contributions of African-Americans to society and culture in America before 1877. The course will examine the lives of black Americans, enslaved and free, from the arrival of the first Africans in the New World through Reconstruction. It will also address more abstract ideas about cultural and "racial" differences. Throughout this course, you will be asked to consider the question "which came first, racism or slavery?" **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 132 - African-American History 2

Course Units: 1.0 This course covers the Black experience in America from the end of the Civil War until the present day. It will generally proceed chronologically, but there may be some overlap as it tries to cover certain themes, such as culture, oppression, resistance, and identity. Throughout the course students will be asked to consider the question to what extent is the African-American experience unique and to what extent is it representative of the "American" experience. **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 135 - Latinos In/As U.S. History

Course Units: 1.0 What does U.S. history look like if we consider it a Latin American nation? This course explores the history of El Norte through the eyes of border-crossing, indigenous communities, Spanish settlers in the South and West, and the Latin American and Caribbean immigrant populations that have made their homes across the country since its founding. We end with a particular focus on Latin American and Latinx communities in 21st-century New York. **CC:** SOCS **ISP:** AFR, AMS, GSW, LAS

HST 138 - Big History

Course Units: 1.0 An exploration of the past from the big bang to the present, dividing the history of the universe, earth, life, and humanity into periods using very large scales of time. **CC:** SOCS, GCHF **ISP:** ENS, STS

HST 140 - History Done Digitally

Course Units: 1 What do you think of when you hear "Humanities"? If you ask someone who works in the humanities what they study, you may hear a hundred different answers: great authors like Chaucer, established historians such as Geoffrey of Monmouth, fantastic works of art such as Myron's Discobolus. You seldom will hear "Data." But that is exactly what all of these great works of literature, history, and art are. Once we make that recognition, a new world opens up. In the modern world, countless tools have been developed to facilitate the access, analysis, and dissemination of data. In this course, we will learn how to use computing technologies (e.g. Voyant Tools, OpenRefine, ArcGIS StoryMaps etc.) to both ask questions that are traditional to the humanities and come up with new questions enabled by the use of these technologies, as well as how technology can make our findings more accessible and understandable. **Cross-Listed:** CLS-193 **CC:** HUM, QMR, SOCS, GDQR

HST 141 - The Bright Ages: Medieval Europe from c. 500 CE to c. 1450 CE

Course Units: 1.0 In the popular imagination, the medieval history of Europe often appears as a narrative of decline ("Fall of Rome") and darkness(Dark Ages) followed by gradual betterment (Renaissance) and progress (Scientific Revolution, Enlightenment, Democracy). This class provides you with the critical and analytical tools to understand why this particular vision of medieval Europe came into being and how to develop a historical understanding of the past, present, and future. We begin our semester at the fringes of Europe, in fifth-century norther Africa, after the sack of Rome in 410 where we analyze Augustine's sermons and his use of the olive press as a metaphor for the sack. Who were the first monks and saints in Late Antiquity and why would anyone convert to Christianity? In the seventh century, you may be astonished to learn that women had significant power as queens, positions they could and would have maintained throughout the medieval period. In the eleventh- to thirteenth centuries, Mediterranean traders moved goods across the seas at the same time as wars - most famously the Crusades - were fought inside and outside Europe. Francis of Assisi, however, took a vow of poverty and become the leader of a movement that offered a serious alternative to what we call capitalism today. Why did society go for one and not the other alternative? We will then study the lives of slaves, farmers, mystics, and a businesswoman. How did they shape medieval European history? Toward the end of the semester, we will take a "reflective break" with Norbert Elias to ask what European civilization is and what Elias understood by the Civilizing Process. He will provide us with the analytical tool historicize the very notion of civilization. We leave the medieval world with Christine de Pizan who built the City of Ladies (1405) and with the Portuguese who began to conquer the Indies and Americas by the mid fifteenth century. In this class, alongside acquiring research and writing skills that are valuable in almost all areas of intellectual endeavor, you will be introduced to the most important events and narratives of medieval European history. Because medieval history is both excitingly different from our present but also often similar, studying this history is also a unique challenging and excellent exercise in abstract and critical thought. **CC:** SOCS **ISP:** REL

HST 142 - Renaissance and Reformation 1450-1600

Course Units: 1.0 In 1450, Europe was the poor and insignificant western end of the Eurasian landmass. By contrast, the world's mightiest empires, wealthiest economies, and most innovative and imaginative cultures stretched from the Persian Middle East across the lands of the Mughals to Ming China. The fantastic wealth of 'the East' tantalized

Europeans as its commodities arrived via the Silk Road along with the stories of travelers. Asia's phenomenal riches taunted Europeans. Its mighty empires fired Western rulers' dreams of power at home and wealth abroad. By the early 1600s, European states like the Dutch Republic had laid the foundations for an eighteenth-century revolution in global political and economic power. What happened in Renaissance and Reformation Europe that paved the way for this revolution? This course will examine critical transformations in the social, economic, political, religious, cultural and intellectual, and environmental history of early-modern Europe between 1450 and 1600. Topics include the Italian and northern European Renaissances, the emergence of Humanism, the development of Renaissance monarchies and nation-states, religious reformations and conflicts, and the first stages of European imperialism in the Atlantic and Indian Oceans. **CC:** SOCS

HST 144 - Global Medieval World

Course Units: 1 This class takes you on a journey through the global medieval world examining connections and comparisons among societies across political boundaries and geographies, boundaries of language and religion, and at the intersection of various economic systems. Over a period of 1000 years, we will explore peoples of Mesoamerica, North and sub-Saharan Africa, the Mediterranean basin, western and eastern Europe, the Middle East, Central Asia, the Indian subcontinent (and Indian Ocean), East Asia and Oceania. **CC:** SOCS **ISP:** AFR, AIS, REL

HST 145 - Early Modern Europe

Course Units: 1.0 European society from the seventeenth century through the Enlightenment, stressing social, economic, institutional, and intellectual developments. **CC:** SOCS

HST 147 - Revolutionary History

Course Units: 1.0 This course will survey major themes in modern European history, including: the Enlightenment and the Industrial Revolution; the French Revolution; the Russian Revolution and Soviet Communism; and the National Socialist Revolution, World War II, and the Holocaust. **CC:** SOCS **ISP:** REE

HST 148 - Europe Between Two Wars

Course Units: 1.0 An analysis of major socio-economic and political developments in western Europe from the end of the First World War to the beginning of the Second World War. **CC:** SOCS

HST 149 - The Second World War Era

Course Units: 1.0 Authoritarian movements in Europe and Asia during the Depression decade, the origins of World War II, the alliance against the Axis, the consequences of the war, and the emergence of new social and political structures during the postwar era. **CC:** SOCS **ISP:** REE

HST 151 - To Hell and Back: Europe in the Twentieth Century

Course Units: 1.0 This course offers a survey of the tumultuous twentieth century in Europe. War, revolution, women's emancipation and socio-economic and scientific changes constitute the subject matter of the course.

HST 152 - The Great War

Course Units: 1.0 This course will cover World War I, at the time called the "Great War," beginning before 1914 with the run-up to war and ending after the war, including the postwar settlement, the early period of the Russian Revolution, and the origins of fascism in Italy and Germany. This is an international history, including the conflict on

the western and eastern fronts as well as conditions on the home fronts of the various countries. The course lectures and readings will be accompanied by several films. **CC:** SOCS **ISP:** REE

HST 154 - Russia in the Imperial Age

Course Units: 1.0 Major institutional and ideological developments from the time of the first Romanov to the February Revolution of 1917. **CC:** SOCS **ISP:** REE

HST 155 - From Lenin to Putin: The Rise and Fall of the Soviet Union and the Emergence of Russia

Course Units: 1.0 Russia on the eve of the Revolution. Political, economic, and social developments during the periods of revolution, war, communism, NEP, rapid industrialization, and the postwar years, including the post-Soviet period. **CC:** SOCS **ISP:** REE

HST 156 - History of Poland

Course Units: 1.0 A history of Poland from the formation of the first Polish state to the present. Poland under foreign occupation, independent Poland, communist, and post communist Poland are the focal points in this course. **CC:** SOCS **ISP:** REE

HST 157 - Modern Jewish History

Course Units: 1.0 European, American & Middle Eastern Jewish communities from the fifteenth century, their origins and function within Christian Europe; response of the European Jewry to the Enlightenment and the growth of anti-Semitism and Zionism. **CC:** SOCS **ISP:** REE, REL

HST 158 - The Holocaust

Course Units: 1.0 European and American Jewry in the period 1933- 1945, focusing on modern anti-Semitism, the Nazi world view, German extermination policies, the response of Europe and the United States, and Jewish behavior in a time of crisis. **CC:** SOCS **ISP:** REE, REL

HST 161 - The Peoples of Britain

Course Units: 1.0 Images of royalty, Wimbledon, fish and chips, or 'Rule Britannia' sometimes come to mind when we think of Britain. Typically, England has received disproportionate attention in histories despite the fact that four 'nations' have existed within the geographical bounds of the 'British Isles' (Ireland, Wales, Scotland, England) and many peoples have found their way to those islands: Celts, Romans, Angles, Saxons, Jutes, Danes, Norse, Normans, Afro-Caribbeans, Southeast Asians, peoples of South Asia, Africa, and the Middle East. This introductory course explores the remarkable interactions among these people who defined the British Isles from the first settlements right through to the present. Upon completion of this course you will have obtained a working knowledge of British History from which to explore the subject in more depth and also be able to demonstrate understanding and appreciation of cultural complexity through the cross-cultural comparisons made in the course. **CC:** LCC, SOCS

HST 168 - History of Sexuality

Course Units: 1 At what time, in what context, and under which conditions have human being come to identify as "heterosexuals," "homosexuals," etc.? This course will explore the different ways sex has been regulated in the Western tradition, from ancient Greece until the present. We will focus on the historical emergence of some key concepts of

sexuality, in particular "the sexual instinct" and "sexual identity." We will read authors from a variety of periods and fields, such as religion (Thomas Aquinas), medicine (Tissot< psychiatry (Krafft-Ebing, Freud), philosophy (Marcuse), and law (Lawrence v. Texas.) **CC:** SOCS, JCHF

HST 171 - Europe, Africa, and the Americas in the Era of Columbus

Course Units: 1.0 A study of the relationship of Spain and Portugal with Africa, Asia, and the Americas from the early fifteenth through the late eighteenth centuries. The course examines the early civilizations of Africa, Europe, and the Americas in the era before the voyage of Columbus and the interaction among these three worlds in the centuries after the Encounter. It concludes with an examination of the cultural legacy of Africa and Europe on the indigenous societies of the Americas and the subsequent development of multicultural and multiracial independent nations. The central role of gender relations between the civilizations, the gendered conflict that characterized the era of exploration, and the role of masculinity are all examined. **CC:** LCC, SOCS **ISP:** GSWS, LAS, REL

HST 172 - Reform and Revolution in Latin America and the Caribbean

Course Units: 1.0 Examines the political and social changes in Latin America as a result of the nineteenth and twentieth century reform and revolutionary movements, including the Unidad Popular government in Chile under Salvador Allende and its overthrow by General Pinochet and the subsequent dictatorial rule. The effect of the 1959 Cuban Revolution on Latin America; the revolutionary uprisings in Central America, in Chiapas, Mexico, and against the military government of Argentina form other key areas of examination. The course places special emphasis on the intersection of gender, race and class conflicts and movements, with particular attention to the role of emerging feminist movements. **CC:** LCC, SOCS **ISP:** AFR, GSW, LAS

HST 173 - History of the Caribbean and Central America

Course Units: 1.0 This course covers the history of the Caribbean and Central America from pre-colonial times to the present. It includes a survey of the impact of both extinct and enduring indigenous cultures, the rivalries among Spanish, Dutch, French, and British powers for control of the Caribbean, and the history of slavery, the plantation system, rebellions and revolutions against enslavement, colonialism, and modern imperialism. The course ends with the early 21st-century struggles for self-determinism among the nations of the region. **CC:** LCC, SOCS **ISP:** AFR, LAS

HST 174 - Modern Ireland

Course Units: 1.0 This course surveys the making of modern Ireland from c. 1700. It emphasizes the interplay of social, religious, and political forces that have shaped the island's history. Analytical topics include the origins of the 'Irish' peoples and the conflicts between Catholics and Protestants; Ireland's incorporation within a Protestant British imperial system; the Great Famine; the Irish Diaspora; the War of Independence and Irish Civil War; the creation of the Republic of Ireland and Northern Ireland; the restoration of women to Ireland's national stories; the failed social revolution in the Republic and the impact of a reactionary cultural climate; the Troubles and the legacy of the Good Friday Agreement. The course materials include histories, memoirs, works of literature, and film. **CC:** LCC, SOCS

HST 175 - Radical Change and Living Well in Latin American History

Course Units: 1 This course asks students to examine, evaluate and analyze historical examples of enduring problem in world history: how to create a society that will thrive but also be sustainable for people and the earth. Students will make connections to similar problems in their own lives and communities and communicate their own ideas for resolving these problems based on research. Finally, i both the course goals introductory assignment and in the final project, students will have an opportunity to set goals that align with their future plans for leaning and working and reflect on what they have learned and how they can continue to apply these skills in their future life. **CC:** LCC, GCHF, GSPE **ISP:** AFR, LAS

HST 181 - Confucians and Conquerors: East Asian Traditions

Course Units: 1.0 An overview of the traditional civilizations of China, Japan, and Korea, focusing on the emergence and development of ideologies, institutions, and social patterns up to 1800. Special emphasis on fostering an appreciation for the richness and complexity of each individual society. **CC:** LCC, SOCS **ISP:** AIS

HST 182 - Rebels, Reds, and Regular Folks: The Turbulent History of Modern Asia

Course Units: 1.0 An analytical overview of the major themes and historical processes that shaped China, Japan, and Korea from the nineteenth century to the present. **CC:** LCC, SOCS **ISP:** AIS

HST 183 - Introduction to South Asian Civilizations

Course Units: 1.0 In this course we shall investigate the area of South Asia by focusing on important historical debates surrounding themes such as history, religion, nationalism, colonialism and family life. We will seek to explore these themes for two to three weeks through Movies and Documentaries: Gandhi, Jinnah, Ambedkar, India Untouched, Jodha Akbar. **CC:** LCC, SOCS

HST 184 - Modern India

Course Units: 1.0 We will concentrate on the impact of colonialism on the Indian subcontinent and on the formation of the modern South Asian States of India and Pakistan through historically-based films. We will study the representation of Indian society and history in the booming Bollywood film industry. The culture of colonialism, the nature of the colonial state and the emergence of nationalism, are themes which are explored. chronologically, we will survey the history of Indian subcontinent from the inception of colonial rule in the late eighteenth century to the establishment of independent nation states of India and Pakistan in the middle of the twentieth century (1800-1947). **Prerequisite(s):** Since this is a survey course there are no prerequisites. **CC:** LCC, SOCS, WAC-R **ISP:** AIS

HST 190 - Islamic World in the Pre-Modern Era ca. 600 CE - 1700 CE

Course Units: 1 Islamic societies and cultures span the world. For centuries, Islam has been a force in global history, shaping political and economic systems, advancing forms of knowledge, and contributing to the cultural diversity of the modern world. This survey course provides an introduction to the history of the Islamic world during the modern era. Students will encounter very diverse Muslim societies by exploring the history of Islam in different regional and temporal settings. **CC:** SOCS, JCHF **ISP:** REL

HST 191 - Islamic World in the Modern Era

Course Units: 1 Islamic societies and cultures span the world. For centuries, Islam has been a force in global history, shaping political and economic systems, advancing forms of knowledge, and contributing to the cultural diversity of the modern world. This survey course provides an introduction to the history of the Islamic world during the modern era. Students will encounter very diverse Muslim societies by exploring the history of Islam in different regional and temporal settings. **CC:** JCHF **ISP:** AFR

HST 194 - The Modern History of the Middle East

Course Units: 1.0 Problems in the political, social, and economic history of the Middle East in modern times; the demise of the Ottoman Empire; impact of the West upon the Arab world; relations among the new Arab states; and the coming of modernization. **CC:** SOCS

HST 195 - From Abraham to Mohamed and Beyond: The Early History of the Jews

Course Units: 1.0 History of the Jewish people in its first 1600 years from tribal beginnings to the destruction of the second Commonwealth. **CC:** SOCS **ISP:** REL

HST 201 - Contemporary Africa

Course Units: 1.0 This course examines the history of Africa since 1950 with an emphasis on politics and culture. Through readings of novels, memoirs and historical accounts, combined with lectures, discussions and films, this course will explore the last fifty years of African history. Much of the course will focus on case studies in such countries or regions as West Africa, East Africa, the Congo, Nigeria, Algeria and Egypt. **CC:** LCC, SOCS **ISP:** AFR

HST 202 - African Women in History

Course Units: 1.0 This course explores the history of women in Africa. It takes an historical approach to looking at the lives, experiences, stories, and changing roles of women across Africa. It situates women's history against the backdrop of gender relations in various contexts in Africa. The course focuses heavily on the writings of African women, such as memoirs, novels, and political treatises. This is a discussion-oriented seminar, interspersed with lectures on salient topics. The weekly meetings will be devoted to discussion of the readings listed in the syllabus. Each class meeting three or more members of the seminar will provide ten-minute summaries of the readings and lead the ensuing discussion. Students in charge of leading discussion should come prepared with plenty of provocative questions. **CC:** SOCS, LCC

HST 203 - Judaism/Christianity/Islam

Course Units: 1.0 This course offers a comparative approach to Judaism, Christianity and Islam, three closely related religious traditions. It attempts to draw out commonalities among and differences between these traditions by focusing on their histories, their understandings of God, revelation and tradition, religion and society, and responses to social and political change. **Cross-Listed:** REL 203 **CC:** HUM, SOCS, LCC

HST 204 - Wine: A Global History

Course Units: 1.0 Global History ls the most important field in History today. This thematic course in comparative global history uses an essential foodstuff in human history to weave together societies and peoples across time, space, and geography: grapes, in this case the empire of viticulture (wine-making). There are great stories of human history to be told using wine. Its history is a global environmental history: the spread, retreat, and reintroduction of wine across climate zones and distinctive terroir worldwide. Vineyards also record the natural history of grapes and their evolution, the battles with disease and infestation, the chemical processes of wine-making, the impact of technology, and the biochemical and sensory effects of color, texture, taste, and intoxication. The history of wine is also a history of empire, trade, and power. The Spanish conquest of the Americas brought with it Christianity, expropriation, and viticulture. Today migrant laborers from Mexico and Latin America harvest the grapes that find their way from Washington, Oregon, and California as wine. The commercial history of wine is thus a history of labor and social justice as old as time. Wine also records spiritual and aesthetic journeys through human history. And it is a window into today's existential challenges of sustainability and climate change. This course teaches foundational concepts in global history and introductory research skills through which students have the opportunity to complete a guided research project. **CC:** LCC, SOCS, WAC

HST 205 - Clash of Civilizations?

Course Units: 1.0 Are we living through a clash of civilizations? East vs West? Christianity vs Islam? Or is this too simple-minded a way to think about human history? Indeed it is. Simple-minded ideas like the clash of civilizations are

not only bad history they betray the need for human understanding in our complex world. This course explores something fundamental to the human experience: the encounters, interactions, and exchanges (for good or bad) of diverse peoples and societies across time and space. We will explore four historic meeting places: Marseille and the south of France in the Classical Greco-Roman Mediterranean; the crossroads of faiths and empires that was early-modern Jerusalem; the Native American and European middle ground of the Great Lakes and the world of the Voyageurs; the hip, historic, and dynamic scene that is modern multicultural Berlin. This is a thematic course in comparative global history; it also teaches research skills and includes the opportunity for you to develop your own guided research on modern Berlin. **CC:** LCC, SOCS

HST 206 - Environmental Histories of Empire

Course Units: 1.0 This course will explore histories of empire in comparative perspective. It provides students with an introduction to global environmental history by focusing on the changing relationships between people and their natural environments. It takes a transnational approach, exploring various case studies drawn from different imperial settings and temporalities. We will look at the development of early states, the growth of the capitalist world economy in the Atlantic, successive periods of empire-building in Africa and Asia, new forms of resource extraction and changing commodity flows, and environmental politics, while placing the natural world at the center of our analysis. In this course, we will use a more expansive definition of imperialism to include not only formal territorial empires, but also informal economic ones and various post-colonial forms of domination. Other themes to be explored will be: changing perceptions of the natural world, industrialization, warfare, urbanization, technological transformations, and changes in production and consumption. The goal is that students will develop of better understanding of the modern world and the ways in which humans have radically changed their natural environments. **CC:** LCC **ISP:** AFR, ENS

HST 209 - Race, Gender, and Nationalism in American Sports

Course Units: 1.0 This course examines the development and the history of US sports from the 19th through the 21st centuries with special focus on sports' bond with nationalism, race, and gender. Modern sports cannot escape its association with US emergence in international affairs at the end of the 19th century. Intertwined with the process of establishing national identity were muscular Christian notions about masculine prowess and belief in women's natural physical limitations accompanied by a persistent belief in the fundamental superiority of the white race and its obligation to dominate over "inferior" races and cultures. As surely as sport became associated with American identity, nationalism, gender, and race became integral defining characteristics of sport. This course will be driven primarily by reading and discussion. Lectures will be used to supplement and place the readings in historical perspective, but the focus will be on reading, comprehension, and analysis. Students are encouraged to bring a variety of pre-occupations, pre-conceived ideas, and personal viewpoints to the course; they will be expected to give oral and written expression to their analysis and perspectives. **CC:** SOCS **ISP:** AFR, AMS, GSWS

HST 211 - American Indian History

Course Units: 1.0 An overview of the diverse experiences and histories of the native peoples of North America in the last five centuries. Particular attention will be paid to native peoples' various strategies to respond to change and challenges to native autonomy and communities. **CC:** LCC, SOCS **ISP:** AMS

HST 212 - "Remember the Ladies": American Women to 1900

Course Units: 1.0 An examination of changing gender roles from 1600 to 1890. Topics include work, family, civil and legal identity, and the impact of race, class, and geographic location on women's experiences. **CC:** SOCS **ISP:** AMS, GSWS

HST 213 - The New Woman: American Women from 1900

Course Units: 1.0 An examination of changing gender roles from 1890 to the present. Topics include the evolution of feminism, and the impact of race and class on women's experiences. **CC:** SOCS **ISP:** AMS, GSWS

HST 214 - American Childhoods

Course Units: 1 What role have children played in shaping American culture and society? This course explores how we can tell a compelling story about the American past through close attention to stories about children and childhood. By tracing the path of American history from accusations made by young girls during the Salem witch trials to images of children used by abolitionists, from fights against child labor to rebel youth in the 1960s, and on to the present day, we will ask what we can learn about childhood in U.S. history. What has changed about American childhoods from the colonial era to the present

HST 216 - The Writing and Ratification of the Constitution

Course Units: 1.0 A study of the major influences on the US Constitution, how it was written, and how it was adopted. **CC:** SOCS **ISP:** AMS

HST 219 - Revolutions in the Global South

Course Units: 1.0 Across human history in the modern age, revolutionary processes have defined politics, culture, and economic systems. They have erupted in virtually every part of the world, spread from region to region, and led to dramatic changes. Most often scholars and students have focused on revolutions in the Western world. However, this transnational and thematic course will explore the history of revolutions and revolutionaries in the global South, or the "Third World" as it was commonly known. Drawing on secondary and primary sources, students will learn about a wide variety of revolutions in Africa, Asia, and the Caribbean, ranging from anti-colonial revolts, revolutionary socialist states, opposition politics, and various movements focused on environmentalism, feminism, and indigenous rights. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AFR

HST 220 - US Foreign Policy 1898-1991

Course Units: 1 To what extent have bottom-up protests influenced U.S. foreign policy? Why have some movements gained more visibility than others? How have Americans formed alliances beyond borders-and to what extent have they fostered meaningful transnational solidarities? To consider these questions, we will examine series of case studiesthat will begin with the Spanish-American War but focus on the Cold War period. As we go, we will build an understanding of how power works in key US foreign policy decisions. Topics include the
idea of human rights, peace protests, and anti-colonial revolutions. **CC:** SOCS

HST 221 - Popular Culture and American History

Course Units: 1.0 The popular arts and entertainments of the late nineteenth and twentieth centuries are placed in historical context and studied as a means to rediscover the intellectual and emotional life of ordinary Americans. **CC:** SOCS **ISP:** AMS

HST 222 - Other Voices: Women in the History of American Ideas

Course Units: 1.0 The contribution of women to the development of American intellectual and cultural life, from Charlotte Perkins Gilman to Angela Davis. **CC:** SOCS **ISP:** AMS, GSWS

HST 223 - Twentieth Century American Intellectual History

Course Units: 1.0 An overview of the major social and political issues that shaped and unshaped American liberal thought from John Dewey to Andrea Dworkin. **CC:** SOCS **ISP:** AMS

HST 224 - Transnational America

Course Units: 1.0 The United States is now the center of global production, yet it is also swept by the forces of international cultural change. How did we reach that position and what consequences does it have for our national integrity, our identity as Americans, our way of life, and our relationship to other nations and peoples? Students read recent literature on the history of transnationality and globalism as it has affected the economy, ethnic identity, cultural production (in literature and film), and international relations of the United States in the twentieth century. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AMS

HST 225 - American Environmental History

Course Units: 1.0 This course aims to give students the knowledge and the tools to think critically about how history has shaped the present state of the earth and human relationships with it. It focuses on the history of man's interaction with nature on the North American continent, with a particular focus on the area that would become the United States, from precolonial times until the present. **CC:** SOCS **ISP:** AMS, ENS

HST 226 - A Novel View of US History

Course Units: 1.0 This course will examine the broad scope of American history from colonial times to the present as it has been revealed in American literature and novels. Employing principally primary source literature, the course will introduce students not only to American history but to an understanding of important events and developments as comprehended by those who experienced those events or who were contemporary interpreters of those events. Supplemented by lectures on the facts of historical events, primary source works will be used to re-introduce personality and complexity to the historical context in order to stimulate student understanding of the American experience. Students will be encouraged to analyze and examine the variety of outlooks that propel history, while also learning an appreciation for the value and potential of personal scrutiny, insight, and perspective. Primarily driven by readings and discussion, lectures will be used to supplement and place the readings in historical context; however, the focus will be on reading, analysis, comprehension, and communication. **CC:** SOCS **ISP:** AMS

HST 227 - Interviews with History: An Introduction to Oral History

Course Units: 1.0 What was history like for men and women who lived it? Oral History is the practice of collecting stories and information about the past from individuals. In this class, students will read, listen to, and watch oral histories; they will learn theories of memory as they relate to oral history; they will discuss the ethical and legal issues surrounding oral history; and they will learn how to perform, record, and edit an oral history interview. Students will spend a significant portion of their time working on individual projects wherein they will conduct and interpret oral history interviews and write an essay based on that work. **CC:** SOCS **ISP:** AMS

HST 228 - History of Union College

Course Units: 1.0 The history of Union College is broad and impressive; however, tight schedules while rushing to class in Butterfield or Bailey, a meeting in Hale House or Feigenbaum, a conference or guest lecture in the Nott, or an event at Achilles makes it easy to overlook that history. Since 1795, there have been wars, economic expansions and depressions, internal and external political conflicts, and social revolutions; through it all. Union has not just survived but endured, while remaining committed to the progressive ideals of its founding. This course will investigate the history of the modern, living institution that is Union today, that is, the physical realities of the college (grounds, buildings, and landscape) as well as the academic, athletic, and social environments that provide life and meaning for

all who have entered its gates. Understanding the history of Union gives students an opportunity to shape the future - as Union and its alumni have shaped the past. **CC:** SOCS **ISP:** AMS

HST 229 - The Adirondacks and American Environmental History

Course Units: 1.0 The Adirondack region of northern New York Slate has been a proving ground for shifting American attitudes toward the environment, from early colonial (ears of wilderness, to intensive resource exploitation, and to efforts to conserve natural resources and preserve distinctive wilderness areas. This course will examine Adirondack environmental history and place it in the context of broader American environmental history. It will leverage Union College's proximity to the region, and the resources of the Union College Kelly Adirondack Center, to offer students both intellectual and experiential engagement with the history of this distinctive place. **CC:** SOCS **ISP:** AMS, ENS, STS

HST 231 - The Civil Rights Movement

Course Units: 1.0 A survey of the civil rights movement, assessing the early campaigns of the 1940s, the development of black grassroots organizations in the 1950s and 1960s, and the impact of black nationalist consciousness in the late 1960s and early 70s. **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 232 - History of New Orleans

Course Units: 1.0 This class examines the history of New Orleans from its founding in 1718 to the present day. The course will proceed chronologically and will focus on the recurring and interrelated themes of Race, Geography, and Culture. In the process we will unravel the extent to which the crescent city is or is not representative of the history of urban America in general. **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 239 - Modern Extremism & Medieval World

Course Units: 1 Whether through movies, video games, or novels, modern society has maintained a longstanding fascination with the world of the European Middle Ages. Yet, as Viking symbols and Crusader slogans used by marchers during the 2017 Unite the Right rally in Charlottesville, VA demonstrated, this period's history has also been used to grow white nationalist movements and spark division. Through studying medieval texts, art, and literature, this course equips you to better understand the historical context behind uses and abuses of medieval culture in popular media and extremist propaganda. **CC:** JCHF, WAC-R **ISP:** REL, STS

HST 240 - The Crusades: Christianity and Islam in Conflict

Course Units: 1.0 The conquest of Jerusalem and the Holy Land by knights from western Europe and the response of the region's Muslims, 1096-1291. Special attention is given to the development of a crusading spirit and its corruption under the influence of religious, political, and economic expediency and personal greed. **CC:** SOCS **ISP:** REL

HST 241 - Mystics, Magic, and Witchcraft in Medieval and Early Modern Europe

Course Units: 1.0 A survey of learned and popular beliefs about the influence of supernatural and occult powers on individuals and society. **CC:** SOCS **ISP:** REL

HST 245 - Occult Sciences and Societies

Course Units: 1.0 Surveys the rise of occult sciences, such as ritual magic, astrology, and alchemy, and the influence of real and imagined secret societies dedicated to the preservation and transmission of such esoteric knowledge. Examines

the legends associated with the suppression of the Templars in fourteenth-century France, and the revival of Platonism, Jewish Kabbalah, and pseudo-Egyptian Hermeticism in Renaissance Italy. Considers the dissemination of such ideas throughout early-modern Europe, the alchemical theories of Paracelsus and Isaac Newton, and the imagined societies of esoteric utopias. Concludes with the rise of Rosicrucianism, Freemasonry, and the Bavarian Illuminati and their possible influence on the French Revolution. **CC:** SOCS **ISP:** REL

HST 246 - Prehistory of Risk

Course Units: 1 This class looks at how European society tried to tame chance and comprehend its whims before and after the arrival of the mathematics of probability around 1650. How did people move from consulting oracles to developing the insurance business? Risk is examined as a historically shaped experience in various areas of its manifestations including oracles, gambling, insurance, philosophy, and theology. **ISP:** AMS

HST 248 - Men, Women, and Gender in Modern Europe

Course Units: 1.0 This course is a lower-division exploration of the creation, operation, and interaction of masculinities and femininities (in the plural) in Europe between roughly 1789 and the present. We will read both primary and secondary works on the topic. "Gender history" is not simply another way of saying "women's history." Instead, we also will employ gender as a lens through which to consider the experiences of both men and women during the period. Learning objectives for the term include critiquing the use of gender as a category of historical analysis; investigating the gap between prevailing modern notions about manhood and womanhood and the lived experiences of modern men and women; and teasing apart the intersection of gender with other factors, especially race, class, age, marital status, and religious identity. **CC:** SOCS **ISP:** GSWS

HST 249 - Nazism

Course Units: 1 This course will investigate the history of National Socialism, including: its prehistory during World War 1 and Weimar Republic; the transformation of German society into the racist "People's Community; the Second World War and Holocaust; and the legacy of the Third Reich in the immediate post-World War 2 era. **CC:** WAC-R

HST 256 - Modern European Ideas

Course Units: 1.0 This course will survey important ideas in modern European history, including the writings of Jean Jacques Rousseau, Voltaire, Montesquieu, Adam Smith, Karl Marx, Charles Darwin, Friedrich Nietzsche, Sigmund Freud, Albert Einstein, Jean-Paul Sartre, Simone de Beauvoir, and Michel Foucault. **CC:** SOCS, WAC, JCHF **ISP:** REE, STS

HST 257 - Modern France and Its Empire

Course Units: 1.0 In this course, we will examine the political, social, economic and cultural history of modem France and its empire since 1789. We will explore the history of France within wider transnational and imperial contexts, as well as in its post-colonial era, when immigration and cultural difference have emerged as central issues within France itself. Through lectures, discussions, novels, memoirs, and films, we will seek to understand the history of modern France as both a nation-state and empire. In particular, we will also look at the colonial and post-colonial histories of francophone West and North African countries. **CC:** SOCS, LCC **ISP:** AFR

HST 258 - Nazi Science, Medicine, & Technology

Course Units: 1.0 This course is a history of how science, medicine, and technology interacted with Nazism, beginning with the background of the First World War and Weimar Republic, through the Third Reich, and continuing through to its legacy during the post-Second World War era. This story extends beyond Germany, both because of the

international effects of this interaction, and through comparisons with science, medicine, and technology under other regimes and in other cultures. **CC:** SOCS, JCHF, JETS, WAC **ISP:** STS

HST 261 - Medieval Britain 1000-1509

Course Units: 1.0 Britain in 1000: England was divided and the Anglo-Saxons were in a fight for survival with the Norse, the kingdom of Scots was an ill-formed hodgepodge of Gaels, Celts, Picts, Saxons, and Norse, and in the West the Cymry, the peoples of Wales, clung fiercely to their identity as the original Celtic inhabitants of Britain. In the decades after the famous Norman conquest of 1066, Britain became part of a vast French-speaking Empire. Which peoples and nations would survive, thrive, and achieve supremacy on the island of Britain? This question is examined by analyzing the Scottish wars of independence, the Hundred Years War with France, the great dynastic struggles of the English Wars of the Roses, the notorious reputation of Richard III and the rise of the Tudors, and the triumph of the Stewart kings in Scotland. **CC:** LCC, SOCS

HST 262 - The Age of Henry VIII

Course Units: 1.0 Remarkable women and men made history in Britain during the Age of Henry VIII: six wives (Catherine, Anne, Jane, Anne, Catherine and Katherine), faithful and far from saintly servants like Cardinal Wolsey, Thomas More, and Thomas Cromwell, and an evangelical boy destined to become Edward VI. This was an age of personal monarchy, patriarchy, and the rule of wealthy elites, but these figures travelled paths and pursued policies that changed the way every person lived. They nurtured and unleashed religious passions that divided generations and whole peoples from one another, and hundreds - eventually thousands - died at the hands of those who believed they had a monopoly on spiritual truth. This course analyzes the imperial ambitions of Henry VIII and Edward VI in Britain and Ireland, the brutal dynastic and religious politics of the period, and the all-out assault on the traditional faith in the Tudor dominions. **CC:** SOCS

HST 263 - The Tudor and Stewart Queens

Course Units: 1.0 The radical Protestant John Knox published a tract in 1558 denouncing what he called the 'monstrous regiment of women'. He had in mind three women who dominated the political scene: Queen Mary I of England (Henry VIII's Catholic daughter) Marie of Guise (widow and queen regent of the deceased James V of Scotland); and young Mary Queen of Scots, betrothed to the future king of Catholic France. Knox had the spectacularly bad luck to publish his attack on queenship at the moment when Mary I died and her Protestant sister Elizabeth ascended the throne, a queen mighty in defense of her authority and with a temper to match her illustrious father Henry VIII. These women defined British History after 1550. Looking back on these years, Francis Bacon wrote of the 'strange perturbations' of England, having been ruled by a boy king (Edward VI) and two women before finally again seeing on the throne a proper adult male, James VI of Scotland - with nice irony, Mary Queen of Scots' son. This course explores the lives of these Tudor and Stewart queens and analyzes the intersections of gender, authority, and religious zeal that defined their age. **CC:** SOCS **ISP:** GSW

HST 264 - The Stuart Wars 1603-1660

Course Units: 1.0 In 1603, James VI of Scotland became the first king to rule all of Britain and Ireland, when he added Elizabeth I's crown to his own. This was the first in a series of remarkable revolutions examined in this course. James successfully consolidated this new Stuart imperium in England, Wales, and Scotland. The Protestant plantations in Ulster created the origins of the modern-day troubles in Northern Ireland. Settlements in the Americas inaugurated a British Atlantic Empire built on sugar and tobacco, slavery and a British diaspora. James passed to his successor Charles I a dangerous ideology of imperial kingship that asserted the crown's unchallenged authority over all matters spiritual and temporal. When Charles attempted to make good on that ideology in his religiously and ethnically diverse kingdoms, the result was war, wars that eventually cost the king his head. For the first and only time, a British king was tried and executed for committing tyranny, the monarchy abolished, and a republic created. Inspired by the message of

radical social justice in the Bible, English men and women demanded freedom and equality in these years. **CC:** LCC, SOCS

HST 265 - The Museum: Theory and Practice

Course Units: 1.0 This course is designed to introduce students to the work of museums through an internship at a Schenectady Museum and accompanying seminar. Articles from anthropology and history (including art history) expose you to the range of practical (e.g., exhibit design, collections policy, planning educational programs) and theoretical issues scholars study (e.g., intellectual property, commodifying culture, whose voice and history should be heard). The internship at a Schenectady Museum gives hands-on experience with museum work and the day-to-day issues museum staff confront. Several fieldtrips introduce different types of museums. **Cross-Listed:** ANT 265 **CC:** SOCS

HST 268 - The Making of Modern Scotland

Course Units: 1.0 Kilts, haggis, heather, and Highlands: all things that come to mind when we think of Scotland. Yet few of us probably appreciate just how much the people of that rugged country contributed to modern history: radical Protestantism and the King James Bible, Highland regiments and Enlightenment thinkers, links golf and Robbie Burns, the steam engine (James Watt) and the "invisible hand" (Adam Smith), Trainspotting (Irvine Welsh) and the Edinburgh Arts Festival. This course studies Scotland's history and its people's search for a modern identity. **CC:** SOCS, LCC

HST 269 - Epidemics and Empire

Course Units: 1 Do epidemics have different values across the world? Whose bodies appear to be more contagious than others? What is the politics of the creation of these differences? This course will allow us to study the history of epidemics such as cholera, bubonic plague, influenza, HIV/AIDS across the modern world so that we can find answers to these questions: when did disease become racial, when did some deaths matter more than others, and why did these differences become so enduring that we saw them in the 21st century exposure to a pandemic, the Covid 19? **CC:** HUL, SOCS, WAC-R **ISP:** STS

HST 270 - History of Latin American Popular Culture

Course Units: 1.0 This course examines the history of Latin America and the Caribbean in the 19th and 20th centuries. Our "texts" for this course are novels, political cartoons, movies, TV shows and music, along with traditional history books. The course seeks to examine the way that Latin American societies have depicted themselves in the popular media, the way that the United States has viewed and absorbed Latin American culture, and the ways that historians have sought to explain the transformations in various countries by examining popular culture. Since Latin American and Caribbean cultures are so closely linked to the United States, and because an increasing number of U.S. citizens are of Latino descent, this course offers valuable insights into the transformations occurring in US culture. **CC:** LCC, SOCS **ISP:** AFR, LAS

HST 271 - History of Mexico

Course Units: 1.0 Mexican civilization from its origins to the present - ancient Maya and Aztec cultures; the Spanish conquest; colonial society; the independence wars; Mexico in the nineteenth and twentieth centuries, especially the Mexican Revolution; and current cultural, social, and economic issues, including the Zapatista rebellion, NAFTA, and the changing nature of the borderlands region between Mexico and the USA. **CC:** LCC, SOCS **ISP:** LAS

HST 272 - History of Brazil

Course Units: 1.0 This is a survey interpretation of Brazilian history from the days of Portuguese expansion to the present, including the contrast between the urban and rural areas, the Atlantic slave trade, slavery and the resistance to it, the plantation system and post-abolition race relations, the destruction of the rainforest, the emergence of democratic structures in modern Brazil, and the rise of Brazil as a 21st century economic powerhouse. **CC:** LCC, SOCS **ISP:** AFR, LAS

HST 274 - Social and Political Movements in Latin America

Course Units: 1.0 This course examines the history of recent social movements in Latin America. We will explore a variety of issues including democracy, racism, class, gender and ethnic divisions, human rights, globalization and popular movements. Rather than viewing Latin America from a North American point of view, we will examine how Latin Americans see themselves and how their culture, economics, and politics have developed in different directions than other parts of the world, especially the United States and Europe. While social movements have at times erupted into full-fledged revolutionary upheavals, more often Latin American struggles have been ongoing, such as factory occupations, land seizures, and demonstrations for gender equality, workers' rights, indigenous autonomy, protection of the environment, and students' rights. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AFR, GSW, LAS

HST 275 - United States Foreign Relations and Modern Latin America

Course Units: 1.0 This course is about relationships, exchanges, and tensions among the people and nations of the Americas from the mid 19th century to the present. The most powerful foreign influence (political and otherwise) in Latin America has consistently been the US, often with quite negative consequences. In the 21st century relations between the US and Latin America have changed dramatically. China has replaced the US as the most important trading partner for several countries, particularly Brazil, the largest economy of Latin America. In addition, the US is experiencing a demographic transformation with an increasing number of immigrants from Latin America making up the populations of just about every state. The history of the US and Latin American is increasingly a "shared" history. In this course we will look at interconnections, comparisons, and the common links between Latin America and the US in what is now a history of both foreign and domestic relations. **CC:** LCC, SOCS **ISP:** LAS

HST 278T - South Africa Mini-Term

Course Units: 1.0

HST 279 - Walls and Fences

Course Units: 1 This is a research course that focuses on structures that have attracted national and international attention, applause, and antagonism. Walls and fences mean very different things to different groups. We will explore the motivations for building walls in many communities and countries at various points in time, analyze whether the walls did what they were intended to do, explore the intended and unintended consequences, examine how various walls have been remembered over time, and talk about what walls say about those who (want to) build them, those who (want to) skirt them, and those who (want to) tear them down. Global challenges such as climate change and military conflict based on race, ethnicity, religion, etc. cause large numbers of people to seek safety elsewhere, while other regions and nations try to protect their people by stopping that flow of people. Students will learn how to read, interpret, and use a variety of sources on this topic, a process that will culminate in a research paper and accompanying oral presentation. **CC:** SOCS, JCHF, WAC-R **ISP:** AIS

HST 281 - Samurai to Salarymen: Modern Japanese History

Course Units: 1.0 Analysis of the social, economic and political changes that have characterized Japan's emergence as a world power from the Meiji restoration to the present. **CC:** LCC, SOCS **ISP:** AIS

HST 282 - The Mongols: Terror, Trade and Tolerance

Course Units: 1.0 This course explores the rise, fall, and memory of the great Mongol empire. Students will read not only about the Mongols themselves, but also about the many cultures and countries that the Mongols conquered, and we will analyze those fraught cross-cultural encounters through primary and secondary source materials. We will also look at how the overwhelmingly negative portrayal of the Mongols has evolved over time, and students will look at the way Genghis Khan is depicted in films and monuments. **CC:** LCC, SOCS **ISP:** AIS, REE

HST 283 - The Mao Years

Course Units: 1.0 This course explores the phenomenal changes and catastrophic consequences of Mao Zedong's domination of China. Although the bulk of the class focuses on events following the founding of the People's Republic of China in 1949 to Mao's death in 1976, we will begin by looking at the China into which Mao was born in 1893 and trace his rise to power. We will also examine the legacy of the Mao years on contemporary Chinese politics and society. Students will analyze Mao's China through memoirs, films, visual propaganda, secondary analyses, and of course, Mao's Little Red Book. **CC:** LCC, SOCS **ISP:** AIS

HST 284 - Hobbled and Heroic: Women in China and Japan

Course Units: 1.0 A comparative look at how the societies of China and Japan shaped the various roles assumed by women in these two cultures, as well as the evolution of those roles over time. **CC:** LCC, SOCS **ISP:** AIS, GSWS

HST 285 - The Samurai: Lives, Loves, and Legacies

Course Units: 1.0 This course explores the evolution of the samurai as a caste, their military and family lives, their passions, and their symbolic meaning to Japanese and to others. We will be reading first-hand accounts written by samurai men and women, viewing a number of well-known and lesser-known samurai films, and looking at how the realities of samurai life compare with the many meanings the samurai have acquired over the centuries. **CC:** LCC, SOCS **ISP:** AIS

HST 286 - Women in South Asia

Course Units: 1.0 This course takes a historical approach towards the topic of gender and sexuality in South Asia, with a particular, though not exclusive, focus on the history of women in the region. The course has three major goals: first, to analyze the colonial state and its policies with respect to women and gender relations; second, to study gender relations, women's voices and women's movements within the context of nationalist struggles in the post-colonial era; and third, to understand the complexities of trying to recover the "voice" of heterogeneous groups of women in South Asia, divided along lines of caste, class, region, occupation and religion. Study material will include academic texts, films and popular television from the subcontinent. **CC:** LCC, SOCS **ISP:** GSWS, STS

HST 287 - Film and Modern India

Course Units: 1.0 This course uses a medium of visual representation-cinema-to explore the portrayal of India. It historically traces the development of the cinematic industry in India and highlights the changing images of the region since the 1950s. Each decade evokes a list of stereotypes, of ideas, and of historical realities. We will examine the extent to which films in each decade captured the reality of the period. In particular, we will trace the maturation of the idea of a nation through films and we will explore the positioning of gender in these decades. In general, this course will adopt critical approaches for looking at aesthetics and the representation of South Asia through cinema. **CC:** LCC, SOCS **ISP:** GSWS

HST 288 - Twenty-First Century India: Bombay to Mumbai

Course Units: 1.0 Bombay represents a distinctive mode of cultural experience in India - an unceasing traffic in things, people, images, and ideas. It has been the crucible of social and cultural politics in India. It is the epitome of modern Indian imagination. The course will examine this state of modernity by doing a focused study on the city of Bombay as a city, society and as the capital of popular culture in India. Some questions the course will examine are: what happens in India when cities-within-cities coincide or collide? How are the categories of caste, class, and ethnicity mapped onto urban bodies and landscapes? What are the political implications of the production of popular culture? How does violence transform the geography of a city and its urban experience? **CC:** LCC, SOCS

HST 289 - Global Indians: South Asian Identity in the United States

Course Units: 1.0 The Indian diaspora today constitutes an important, and in some respects a unique force, in world culture and in the United States. We will begin by studying Indians migrating worldwide through the nineteenth and twentieth centuries with a focus on the United States to pose critical questions about identity, race, religion, gender, cultural assimilation and change. **CC:** LCC, SOCS **ISP:** AMS

HST 291 - Construction for Humanity

Course Units: 1.0 An interdisciplinary introduction to the technology of construction and the social uses of building by humans. The course considers types of building materials and their application to domestic housing, castles, cathedrals, palaces, monuments, dams, bridges, tunnels, and skyscrapers. **Cross-Listed:** ENS 291 **CC:** SET, SOCS, GETS **ISP:** ENS, STS

HST 292 - History of Computing

Course Units: 1.0 A survey of tools for computation, from number systems and the abacus to contemporary digital computers. The course focuses on the development of modern electronic computers from ENIAC to the present. Study of hardware, software, and the societal effects of computing. **Cross-Listed:** CSC 080 **CC:** SET, SOCS **ISP:** STS

HST 293 - History of Medicine

Course Units: 1.0 This course offers a survey of the history of medicine in the Western world from the ancient Greeks to the present. We will consider several key moments in this history, such as the so-called "Greek miracle" in medicine (Hippocrates), the discovery of blood circulation (William Harvey), and the invention of bacteriology (Louis Pasteur and Robert Koch). In the last two class sessions we will focus more specifically on the history of psychiatry. All of the class readings are primary sources. **CC:** SOCS, WAC **ISP:** STS

HST 295H - History Honors Independent Project 1

Course Units: 0.0

HST 296H - History Honors Independent Project 2

Course Units: 1.0

HST 299 - The Nuclear Age

Course Units: 1.0 The nuclear age began with the discovery of radioactivity on the eve of the twentieth century and continues on to the present. The technology people have created to study and exploit the energy and particles released

by nuclei, including nuclear weapons and nuclear power, but also many other applications in industry and medicine, have defined this age. This course will survey these economic, political, social, and cultural problems facing mankind: the proliferation of nuclear weapons, and human-induced climate change. **CC:** SOCS, GCHF, GETS, WAC **ISP:** ENS, STS

HST 302 - Comparing Muslim Cultures

Course Units: 1.0 This course explores the history of Islam in diverse regional and temporal settings. It explores the unity of Islam, through an examination of the early history of the religion and its founding texts and tenets. However, the main emphasis of this course will be Islam's remarkable heterogeneity over time and space; the foci will be case studies drawn from across the Muslim world - in Africa, the Middle East Asia and Europe. Through readings and discussions, the course examines the following ten topics: The foundation of Islam, the expansion of Islam and conversion processes, Muslim travelers and trade, religious tolerance, women and gender in Islam, Islamic Education, religious revivalism and reform, Muslim lands under European colonial rule, Islam in the West, and the challenge of modernity. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AFR, REL

HST 303 - Islam in Africa

Course Units: 1 This course will examine the social, cultural and political history of Islam in Africa. More particularly, we will explore the relationship between Islam and colonialism, Sufism and 'modernist reformers,' Muslim states and slavery, political Islamism and democracy, and the intersection of local and global forces in the constitution of Muslim societies in Africa. **Prerequisite(s):** 1 course in HST at 100 or 200 level **CC:** LCC, SOCS **ISP:** AFR

HST 304 - Cold War in Africa

Course Units: 1.0 This course will explore the Cold War period in African history with particular focus on theaters of conflict, such as the Congo, the Horn of Africa, and Angola, as well as revolutionary movements. We will examine modes of governance and political culture in African states, socialist and capitalist variants of development, and their discontents. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AFR

HST 312 - "Bonds of Womanhood": History of Women's Rights in the United States

Course Units: 1.0 This course examines major themes in the study of women's rights in the United States. Topics include constitutional and legal rights changes over time; the interplay of gender with race, class, and sexuality involved in "rights" movements since the nineteenth century; and current controversies over women's rights. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS **ISP:** AMS, GSWS

HST 315 - Race and Constitution

Course Units: 1.0 One purpose of this course is to help you better understand the role of race in the legal, constitutional, and political history of the United States. Issues regarding race and slavery have been a constant source of constitutional debate (in one way or another) from the drafting of the Constitution until the present day. Focusing on racial issues, this course examines the historical context in which the Constitution of the United States was drafted and ratified and explores the various methods by which its meaning has changed since 1787. Therefore, this course is about both race in America as well as the Constitution and Constitutional interpretation. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS, WAC **ISP:** AFR, AMS

HST 322 - Slavery and Freedom

Course Units: 1.0 Examines major themes in the historiography of American slavery. Topics include the relationship between racism and the growth of slave labor, the development of African American slave culture, the nature of the enslaved family, and the transition from slavery to freedom. **Prerequisite(s):** any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AMS

HST 323 - Race and Revolution

Course Units: 1.0 This course examines the American Revolution and the Haitian Revolution. With regard to the former, it addresses the "Jefferson question" - that is, how could the author of the Declaration of Independence be the owner of over 200 slaves. Therefore, it deals with competing interpretations in the Early American Republic of the Ideology of "liberty" and "equality." Next, the course delves into the far more radical Haitian Revolution, the only successful slave revolution in history. It will deal with the influences of the American and French revolutions on the French New World colony of St. Domingue that made the Haitian revolution possible. Finally, the course examines the impact of the Haitian Revolution on slavery and the anti-slavery movement in the United States. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AFR, AMS, LAS

HST 324 - Race in American Memory

Course Units: 1.0 "The struggle of man against power," wrote Milan Kundera, "is the struggle of memory against forgetting." This course will examine that struggle as it has taken place in the United States around the issue of race. How have Americans as a nation chosen to remember events that involved race? How and by whom were these collective memories constructed? In what ways were they contested? How have they changed over time? We will explore these issues focusing on such phenomena as Indian removal, slavery, the Civil War, Jim Crow, Japanese internment and World War II, and the Civil Rights movement, examining depictions in public history and popular cultural forms, including memorials, museums, battlefields, literature, and film. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 325 - War in American Memory

Course Units: 1.0 In recent years, historians have become increasingly interested in collective memory: its construction, its evolution, and the ways in which it has been used as an instrument of power. Collective memories of wars in particular work to inform ongoing debates about national identity. This course examines the ways that Americans have remembered their nation's wars. How were these collective memories constructed and in what ways were they contested? What do they reveal about social. political, and economic tensions? To what ends were these collective memories mobilized? How have they changed over time, and how do we as historians understand those changes? In this class we will explore traditional expressions of war memories such as monuments, memorials, and battlefields as well as cultural expressions of these memories in art, literature, and film. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS **ISP:** AMS

HST 331 - Representing America: United States History in Film

Course Units: 1.0 This course compares the representation of American history in Hollywood film with the reconstruction of our past by scholars. Each week students will critically examine the historically-based films of D. W. Griffith, John Ford, Frank Capra, and others. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS, WAC **ISP:** AMS, FLM

HST 333 - Hollywood Film

Course Units: 1.0 In studying the history of Hollywood film, then, we will study one of the most important elements of American culture as seen at home and from abroad. Our objectives in this course will be to get behind the cliches and platitudes about the Hollywood experience to its more complex and substantive history. We will learn the basic chronology of American dramatic film history, the tools of historical film research and some of the methods of technical film analysis. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS **ISP:** AMS, FLM

HST 336 - The Roosevelt Era

Course Units: 1.0 This course will focus on major interpretive issues that surround the presidency of Franklin Delano Roosevelt. We will study how historians have disagreed, over time, on issues such as: Was FDR a raving radical or the best friend of big business? Was the New Deal a good deal or a raw deal for African Americans? Was World War Two a "good war"? Could FDR's administration have done more to prevent the Holocaust? This is a reading-intensive, discussion-centered class that requires active student engagement. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS **ISP:** AMS

HST 362 - Black Britain: Race and Empire

Course Units: A future king of Great Britain is asked if the royal family is racist. Black Lives Matter activists in Bristol pull down the statue of the notorious slave trader Edward Colston and dump it into the very harbor from which his ships offloaded slaves. The BBC refuses to repeat an episode of the iconic 1970s sitcom Fawlty Towers for being racially insensitive ... to Germans - no one mentions that a British West Indian doctor is labelled with the n-word. Netflix strikes gold with the multicultural cast and romping sexuality of Bridgerton, turning the staid "white" Regency period on its head. The Tories launch a "war on woke" for votes, historical truth be damned. Just how can people figure out what it means to be a citizen of the United Kingdom today? Through an analysis of history, literature, film, and media this course reveals the unknown, lost, and censored history of race and empire that defines the United Kingdom's past. It is a burden of history carried by every U.K. citizen, but in dramatically unequal and inequitable ways. We will learn how historical ignorance and dishonesty fuel racism in the U.K. today - as they do in so many countries. In this course, students play an active role in developing and selecting the content through which we explore these pressing questions of social justice. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC

HST 366 - British Cinema

Course Units: 1.0 What films come to mind when you see the words "British Cinema"? Alfred Hitchcock's 39 Steps or Carol Reed's classic film noir The Third Man? Fabulous historical epics like Zulu, Elizabeth, or Braveheart? Comedies from The Ladykillers to the unclothed Sheffield steelworkers of The Full Monty? The tale of football of multicultural Britain that is Bend It Like Beckham? This course will study the historical development of British cinema, tracing its roots from music halls at the turn of century to the multiplexes of a globalized culture dominated by Hollywood. We will also explore the different types and genres of film to be found in British cinema: realism and expressionism, cinema as national popular culture, humor and horror, constructions of Britishness, film as an ideological medium, films that pushed the boundaries of sex and orientation, epics, and imperial and post-colonial themes that played out on the screen. By the end of this course you will understand the complex and diverse character of British cinema through the analysis of actual films and engagement with critical studies of them. This is a course for advanced students taught in an intensive seminar format; you will be expected to view films outside of class time. **Prerequisite(s):** Any 100-level or 200-level history or film studies course or permission of the instructor. **CC:** LCC, SOCS, WAC **ISP:** FLM

HST 367 - The British Empire

Course Units: 1.0 How did the peoples of two windswept, rainy islands - Britain and Ireland - off the northwest corner of Europe create the world's greatest modern empire? Through an analysis of history, literature, and film, this course analyzes the process of empire-building in the eighteenth and nineteenth centuries, the interaction with and impact on

the colonial peoples of North America, Asia, and Africa, and the "end" of empire in the twentieth century. This is a course for advanced students taught in an intensive seminar format that emphasizes the creative and critical examination of topics through scholarly reading and active discussion. Prerequisite: any 100-level or 200-level history course or permission of the instructor. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS

HST 371 - Indigenous Rights

Course Units: 1 Where did the vibrant indigenous rights movements that are changing the face of contemporary Latin America come from? Indigenous communities have been organizing to protect their lands, their communities, and their livelihoods since 1492. In this class we will focus on these histories of mobilization and political struggle in the 19th and 20th centuries. By exploring these struggles, this course asks you to think about history differently: can we imagine history as something other than a line of progress? Can we imagine politics beyond the state? **CC:** LCC, WAC, JCHF, JSPE **ISP:** AFR, GSWS, LAS

HST 372 - Sex, Race and Gender in Latin America

Course Units: 1.0 This course examines the history of the intersection of race, sex and gender in Latin America from the pre-colonial period to the present, especially as evidenced in the changing status of women and the patriarchal order. This history traces the effect of broader societal transformations such as colonialism, imperialism, and economic and political developments on the gender division of labor and the construction of class, race and national identity. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** GSWS, LAS, REL

HST 383 - The Last Dynasty: The Glory and Fall of the Qing Empire, 1644-1911

Course Units: 1.0 For 250 years, the Qing Dynasty ruled China, but when it fell in the dramatic 1911 Revolution, the entire imperial system fell with it. This course will focus on the enormous social, political, and economic changes that shaped China during the reign of the Manchu dynasty and changed China forever. **Prerequisite(s):** any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AIS

HST 401 - Seminar in Africa/Middle East

Course Units: 1.0 **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, WAC, WAC-R **ISP:** AFR, REL

HST 402 - Seminar in Africa/Middle East: French Empire

Course Units: 1.0 This course examines the history of the French empire in West Africa, North Africa and Southeast Asia. The aim of the course is to introduce students to the history of the wider Francophone world. Three main phases in the long history are explored: colonialism, decolonization and immigration. The course moves chronological through these phases exploring each in diverse geographical settings, and drawing on readings pertaining to particular themes such as the culture of empire, political economy of colonialism, women and gender, literature and expressive culture, colonial violence, and resistance. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS, WAC, WAC-R **ISP:** AFR

HST 411 - Seminar in US History: History of New York City

Course Units: 1.0 New York has occupied the center of American financial, cultural, and political life since the Civil War. This course will trace the history of New York City from the early 19th century to the end of the 20th, as it rose to become the preeminent urban center of the United States and, for some, the world. We will look at the city's political,

social, and cultural history in all its dimensions, including its service as the primary port of disembarkation for European immigrants, its role as a cultural capital and its history as a center of political dissent. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS, WAC, WAC-R **ISP:** AMS

HST 412 - Seminar in US History: The Old South

Course Units: 1.0 This class examines the history of the Old South, focusing on the period from 1800 to 1861. The lectures and readings cover a variety of topics, including myths and facts about southern society and culture, slavery and the strengthening of southern distinctiveness, and political events that eventually lead to the creation of a separate (short-lived) southern nation in 1861. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS, WAC, WAC-R **ISP:** AFR, AMS

HST 413 - Seminar in US History: Disasters in American History

Course Units: 1.0 This research seminar will examine the American experience with disasters over the course of the past three centuries. We will study how natural and technological disasters have impacted American society in different eras; how explanations for the cause of disasters have changed over time; how factors such as race and class have influenced vulnerability to disaster; and how charitable and governmental responses to disaster have evolved over the course of American history. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS, WAC, WAC-R **ISP:** AMS

HST 414 - Seminar in US History: Lincoln: Politician to Pop Icon

Course Units: 1.0 Abraham Lincoln has received perhaps the most attention of any U.S. president in both scholarly studies and popular portrayals. Why? This course examines Lincoln during his lifetime: as a man coming of age in Jacksonian America, as an itinerant lawyer, as a fond father and troubled husband, as a politician during a major change in the party system, and as a wartime president. Furthermore, we consider Lincoln's post-assassination career from martyred president to memorialized and criticized symbol of civil rights to motion picture subject. Students will propose, research, and write a seminar paper that examines an aspect of Abraham Lincoln as a major figure in American history and culture. **CC:** SOCS, WAC, WAC-R **ISP:** AMS

HST 431 - Seminar in European History: Nazism

Course Units: 1.0 A history of National Socialism (Nazism) from its origins after the First World War to its postwar legacy, including the Second World War and Holocaust. Students will write a research paper based on both secondary and primary sources. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS, WAC, WAC-R

HST 441 - Seminar: National Socialim

Course Units: 1 **CC:** SOCS, WAC, WAC-R

HST 461 - Seminar in European History: Discovery of Britain and Ireland

Course Units: 1.0 The broad topic of this seminar is the 'discovery' of early-modern Britain and Ireland by its own people. When we think of discovery in the early modern period, what comes to mind are often images of intrepid explorers pushing the boundaries of geography and scientific knowledge, merchants eager to tap the exotic wealth of 'the East', or religious fanatics bent on the conquest of bodies and souls in the Americas. Yet for the peoples of Britain and Ireland, their own islands were an undiscovered country in 1500. Only a tiny number of people could claim to have seen some or all of the country outside their own valley or village. By contrast, travel and tourism were commonplace in Britain and Ireland by 1800. What was the experience like for those British and Irish men and women who explored

the undiscovered country at home in the three hundred years between? What did they have to say about the people and places they encountered? How did their works "construct" their fellow inhabitants? In this seminar you will learn methods of inquiry that can be applied to answer such questions, conduct original research using early-printed books and manuscript travel narratives, and complete a research paper of your findings. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS, WAC, WAC-R

HST 471 - Seminar in Latin America: The Cuban Revolution

Course Units: 1.0 This seminar examines the history of Cuba from the 1959 triumph of the revolution led by Fidel Castro and the 26th of July Movement, through the several decade-long period in which Cuba struggled to build an independent communist nation aligned with the Soviet Union, into the post-Cold War decades since the demise of the Soviet bloc and ending with the recent opening of relations with the United States. Students will write a seminar paper on a topic of their choice, utilizing primary and secondary source. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS, WAC, WAC-R **ISP:** LAS

HST 481 - Seminar in East Asian History: Remembering World War II in Asia

Course Units: 1.0 World War II was the most destructive conflict of the twentieth century, but many students in America are unfamiliar with the toll it took on Asia and why residual tensions between Japan, China, and Korea remain so real and so raw today. This course examines how the war came about, how it is remembered, and how its complex legacy still affects the region. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS, WAC, WAC-R **ISP:** AIS

HST 482 - Seminar Caste & Caste Conflict in Cont. India

Course Units: 1 **CC:** LCC, SOCS, WAC, WAC-R

HST 490 - History Independent Study 1

Course Units: 1.0 **CC:** SOCS

HST 491 - History Independent Study 2

Course Units: 1.0

HST 492 - History Independent Study 3

Course Units: 1.0

HST 493 - History Independent Study 4

Course Units: 1.0

HST 498 - History Senior Thesis 1

Course Units: 0.0

HST 499 - History Senior Thesis 2

Course Units: 2.0 **CC:** WS

Interdepartmental

IDM 295H - Interdepartmental Honors Independent Project 1

Course Units: 0.0 First part of the two term scholars independent project. The first part is graded Pass or Fail.

IDM 296H - Interdepartmental Honors Independent Project 2

Course Units: 1.0 Second part of the two term scholars independent project. **Prerequisite(s):** IDM 295H

IDM 487 - Double Major Thesis 1

Course Units: 0.0 First part of a three term thesis for students pursuing a double major. The first part is graded Pass or Fail.

IDM 488 - Double Major Thesis 2

Course Units: 2.0 Second part of a three term thesis. **Prerequisite(s):** IDM 487 **CC:** WS

IDM 489 - Double Major Thesis 3

Course Units: 1.0 Third part of a three term thesis. **Prerequisite(s):** IDM 488 **CC:** WS

IDM 490 - Interdepartmental Independent Study

Course Units: 1.0 For independent studies that span two departments. By permission of instructor only.

IDM 498 - Interdepartmental Senior Thesis 1

Course Units: 0.0 For interdepartmental majors who are pursuing a two term senior thesis. The first half is graded Pass or Fail. **CC:** WS

IDM 499 - Interdepartmental Senior Thesis 2

Course Units: 2.0 Second half of a two term senior thesis. **Prerequisite(s):** IDM 498 **CC:** WS

Integrated Math-Physics

IMP 120 - Integrated Math/Physics

Course Units: 2.0 An introductory team-taught, two-term-long sequence of integrated courses, two in mathematics and two in physics, roughly spanning the content of MTH 115 , MTH 117 , PHY 120 and PHY 121 . Designed for

engineering students as well as other interested students. **Prerequisite(s):** MTH 113 , by invitation. **CC:** QMR, SCLB, GNPS **ISP:** ENS

IMP 121 - Integrated Math/Physics

Course Units: 2.0 An introductory team-taught, two-term-long sequence of integrated courses, two in mathematics and two in physics, roughly spanning the content of MTH 115 , MTH 117 , PHY 120 and PHY 121 . Designed for engineering students as well as other interested students. **Prerequisite(s):** IMP 120 **CC:** QMR, SCLB **ISP:** ENS

Interdisciplinary

ISC 008 - Internship

Course Units: 0.3 Students who have secured an internship that meets College guidelines may apply for an Internship Transcript Notation. "ICS 008 Internship Transcript Notation" is 0.3 course credits and is graded Pass/Fail. For more information please contact sholarsdirector@union.edu

ISC 109 - Making Meaningful Writing

Course Units: 1 This course is an opportunity to reflect on your life as a writer, and enhance your ability to talk with other people about their writing. We'll study the role of personal voice and narrative technique in academic contexts and beyond, paying special attention to themes of audience, genre, and situation, as well as creativity, purpose, motivation, and the role of research in the writing process. We'll think deeply about how we write and why, and we'll spend significant time sharing our writing and our writing practices. **CC:** WAC-R

ISC 111 - Portfolio Management

Course Units: 0 Students in this course manage a portion of Union College's endowment known as the Student Investment Fund (SIF). The students are responsible for monitoring the fund's performance, asset allocation, security selection, and governance. Student presentations make up most of the course. These consist of portfolio performance reviews, investment pitches, divestment pitches, industry research reports, recommendations on voting shares owned by the fund. Students will work in teams with more senior students mentoring their junior peers. This course can be taken 3 times to receive 1 credit.

ISC 203 - Exploring Healthcare Through Community

Course Units: 1 A field course combining supervised observation and/or community based learning experiences in various health care settings with the study of problems and means of health care delivery and the social determinants of health. Please see department for approval and application process. **CC:** WAC, JSPE **ISP:** STS

ISC 207 - Applied Library Research

Course Units: 0 This is the first part of a three-term practicum sequence that introduces students to college-level research. In addition to learning about research, information literacy, scholarly conversation and information ethics, students will observe how research is conducted, produced and retrieved using the resources at the Schaffer Library and beyond. Over the course of the sequence students will learn research methods, and help evaluate and reflect on peers' research assignments. Students who complete the practicum sequence will be eligible to work in the library as a peer research mentor.

ISC 208 - Applied Library Research

Course Units: 0 This is the second part of a three-term practicum sequence that introduces students to college-level research. In addition to learning about research, information literacy, scholarly conversation and information ethics, students will observe how research is conducted, produced and retrieved using the resources at the Schaffer Library and beyond. Over the course of the sequence students will learn research methods, and help evaluate and reflect on peers' research assignments. Students who complete the practicum sequence will be eligible to work in the library as a peer research mentor.

ISC 209 - Applied Library Research

Course Units: 0 This is the third part of a three-term practicum sequence that introduces students to college-level research. During the last two terms, we've discussed the process of doing research. During this third part of the three-term practicum, we'll put the concepts already discussed into the context of the peer research consultation and analyze pedagogical approaches to peer consultation. Students will apply research and mentorship skills to address peers' research needs. Students will use the skills gained to plan, draft, and revise a capstone project that they will build over the course of the practicum.

ISC 291 - Theory & Teaching of Writing 1

Course Units: This is the first part of a three-term practicum that introduces students to the teaching of college-level writing and the ideas and history that inform it. In addition to learning about
composition theory and pedagogy, students will observe how writing is taught at the Union College Writing Center. Over the course of the three-term practicum, students will learn how to lead their own one-on-one peer review conferences and practice how to teach writing workshops in small groups.Students who complete the practicum sequence will be eligible to work in the Writing Center.

ISC 292 - Theory & Teaching of Writing 2

Course Units: This is the second part of a three-term practicumthat introduces students to the teaching of college-level writing and the ideas and history that inform it. In addition to learning about composition theory and pedagogy, students willobserve how writing is taught at the Union College Writing Center. Over the course of the three-term practicum, students will learn how to lead their own one-on-one peer review conferences and practice how to teach writing workshops in small groups. Students who complete the practicum sequence will be eligible to work in the Writing Center.

ISC 293 - Theory & Teaching of Writing: A Practicum

Course Units: This is the third part of a three-term practicum that introduces students to the teaching of college-level writing and the ideas and history that inform it. In addition to learning about composition theory and pedagogy, students will observe how writing is taught at the Union College Writing Center. Over the course of the three-term practicum, students will learn how to lead their own one-on-one peer review conferences and practice how to teach writing workshops in small groups. **CC:** WAC

ISC 300 - Students Call for Social Change: Write to Change the World

Course Units: 1.0

Storytelling is powerful. Storytelling can change the way we see reality, and ourselves in it. Storytelling can inspire; it can change lives. In this class, students will write a personal narrative that calls for social change. Each writer will grapple with a unique and personal issue that has significantly impacted their life. They will set out to express their call to action so as to inspire the next wave of changemakers.

This is a highly participatory class in which students work to support one another through workshop-based activities and constant reflection, writing, and editing. Students will work in teams to write, edit, typeset, market, and design their book. This book will to be published through Amazon's platform known as "Createspace." In the process, students will gain the skills needed to communicate to a broader public and become published authors. Students will discuss the meaning of social change in their everyday lives and examine what they can learn from other young social changemakers by reading books, such as Adam Braun's The Promise of a Pencil: How an Ordinary Person Can Create Extraordinary Change, and viewing films like The Clean Bin Project and Living on One Dollar. They will also write a journal to reflect on their own growth throughout the course. **CC:** HUM, JCAD, WAC

ISC 360 - Humanities Super Seminar

Course Units: 1.0 A multidisciplinary course taught by three different humanities faculty. Based on a different overarching topic every year, students from all disciplines across campus engage in the reading and analysis of visual and written material, in deeply challenging conversations, in the synthesizing of ideas, and in the creation of a host of different projects, such as podcast interviews, photographic journals, webpage designs, video projects, set designs, sculptures, visual installations, debates and presentations. Each Humanities Super Seminar includes speakers or workshops open to the larger Union and Schenectady community. Course syllabi, student blog discussions, and class projects will be showcased every year on the class website. **CC:** HUM

MIN 123 - Biodiversity Data Analytics

Course Units: 1 Biodiversity refers to richness of plant and animal life that surrounds us. Modern humans spend most of their time in climate-controlled indoor spaces and have fewer and fewer opportunities to commune with Nature. And yet, new research indicates that a more thorough involvement with Nature is not just important, but essential. This course will explore the Global Challenge of biodiversity loss thorough a Data and Quantitative Reasoning Perspective.

Italian

ITL 100 - Basic Italian 1

Course Units: 1.0 A foundation course in Italian, open only to students who have been accepted for specific International Programs. **CC:** HUM

ITL 104T - The Italian Language Studied Abroad

Course Units: 1.0 A continuation of Basic Italian I. **Prerequisite(s):** ITL 100 . See International Programs. **Note:** Spring term in Florence.

ITL 250T - The Italian Language Studied Independently Abroad

Course Units: 1.0

ITL 251T - The Italian Language Studied Independently Abroad

Course Units: 1.0

Japanese

JPN 100 - Basic Japanese 1

Course Units: 1.0 This course provides a basic communicative skills in listening, speaking, reading and writing (hiragana, katakana, and introductory kanji) in real-life situations. It is designed for students with no knowledge of the language. Contact the Japanese Professor if you have experience in the language or you have more than 2 years of high school instruction. **CC:** HUM, JWOL **ISP:** AIS

JPN 101 - Basic Japanese 2

Course Units: 1.0 A continuation of JPN 100 **Prerequisite(s):** JPN 100 or equivalent. **CC:** LCCJ, HUM, JWOL **ISP:** AIS

JPN 102 - Basic Japanese 3

Course Units: 1.0 A continuation of JPN 101 **Prerequisite(s):** JPN 101 or equivalent. **CC:** LCCJ, HUM, JCHF, JWOL **ISP:** AIS

JPN 200 - Intermediate Japanese 1

Course Units: 1.0 Needs to complete JPN 102 at Union or be able to understand and exchange basic conversations and describe their basic needs and thoughts in speaking and writing. Contact the Japanese professor if you have experience in the language. **Prerequisite(s):** JPN 102 or equivalent. **CC:** HUM, JWOL **ISP:** AIS

JPN 201 - Intermediate Japanese 2

Course Units: 1.0 A continuation of JPN 200 **Prerequisite(s):** JPN 200 or equivalent. **CC:** LCCJ, HUM **ISP:** AIS

JPN 202 - Intermediate Japanese 3

Course Units: 1.0 A continuation of JPN 201 **Prerequisite(s):** JPN 201 or equivalent. **CC:** LCCJ, HUM, WAC, JCHF, JLIT, JWOL **ISP:** AIS

JPN 204T - The Japanese Language Studied Abroad

Course Units: 1.0 Emphasis on communicative skills. See International Programs. **Note:** Fall term in Japan.

JPN 205T - Written Japanese Abroad

Course Units: 1.0 Emphasis on communicative skills. See International Programs. **Note:** Fall term in Japan.

JPN 250T - The Japanese Language Studied Independently Abroad 1

Course Units: 1.0 **ISP:** AIS

JPN 251T - The Japanese Language Studied Independently Abroad 2

Course Units: 1.0 **ISP:** AIS

JPN 252T - The Japanese Language Studied Independently Abroad 3

Course Units: 1.0 **ISP:** AIS

JPN 296H - Japanese Honors Ind Project 2

Course Units: 1 **CC:** HUM

JPN 300 - Advanced Intermediate Japanese 1

Course Units: 1.0 The primary goal of this course is the development of a broad competency in speaking listening, reading, and writing in a culturally coherent way. Materials will cover a wide range of academic and cultural interests. **Prerequisite(s):** JPN 202 or equivalent. **CC:** LCCJ, HUM, GCHF, GWOL **ISP:** AIS

JPN 301 - Advanced Intermediate Japanese 2

Course Units: 1.0 Continuation of JPN 300 **Prerequisite(s):** JPN 300 or equivalent. **CC:** LCCJ, HUM **ISP:** AIS

JPN 302 - Advanced Intermediate Japanese 3

Course Units: 1.0 Continuation of JPN 301 **Prerequisite(s):** JPN 301 or equivalent. **CC:** LCCJ, HUM **ISP:** AIS

JPN 490 - Japanese Independent Study 1

Course Units: 1.0 **Prerequisite(s):** Permission of the instructor.

JPN 491 - Japanese Independent Study 2

Course Units: 1.0 **Prerequisite(s):** Permission of the instructor.

JPN 492 - Japanese Independent Study 3

Course Units: 1.0 **Prerequisite(s):** Permission of the instructor.

MLT 250 - Language, Identity, and Power in Japan

Course Units: 1.0 This course will focus on societal aspects which are represented in the characteristics of language. Discussions will include gender differences, formality, and communication strategies. This course will be taught in English and no prior Japanese language knowledge is required. **CC:** HUM, LCC **ISP:** AIS, GSWS

MLT 254 - Explore Japanese Manga and Anime

Course Units: 1.0 This course examines the rich world of Japanese manga (comic books) and anime (animation), one of the most significant cultural products in Japan and a dominant global media export. The topics include the issues of the relationship between humans and nature; gender relations; humans and technology; "Japaneseness" of anime; and

globalization of manga. This course will be taught in English and no prior Japanese language knowledge is required. **CC:** HUM, LCC **ISP:** AIS

Latin American and Caribbean Studies

LAS 101 - Latin American and Caribbean Studies Intro

Course Units: 1.0 This course is an overview of Latin American and Caribbean politics, culture, history, economics, and environmental issues. Through readings, films, discussions, and guest speakers, students gain a solid background in Latin American history and societies. LAS 101 is required for LACS majors/minors and highly recommended for students majoring in Spanish, interested in international or global politics, or planning to apply for full terms or mini-terms to Latin America and the Caribbean. **CC:** LCC, SOCS **ISP:** AFR, LAS

LAS 200T - Women, Environment, Social Change

Course Units: 1.0 **ISP:** ENS, GSWS

LAS 239 - Latin American Philosophy

Course Units: This course will examine some of the most important texts from the history of Latin American philosophy. Topics discussed will include human rights, colonialism, feminism, national identity, race and racism, and the barbarism-civilization dichotomy.
CC: HUM, LCC, JCHF, JSPE

LAS 295H - Latin American and Caribbean Studies Honors Independent Study 1

Course Units: 1.0

LAS 296H - Latin American and Caribbean Studies Honors Independent Study 2

Course Units: 1.0 **Prerequisite(s):** LAS 295H Faculty permission required. **Note:** Credit awarded upon completion LAS 296H.

LAS 490 - Latin American and Caribbean Studies Independent Study 1

Course Units: 1.0

LAS 491 - Latin American and Caribbean Studies Independent Study 2

Course Units: 1.0

LAS 497 - Latin American and Caribbean Studies One Term Senior Project

Course Units: 1.0 **CC:** WS

LAS 498 - Latin American and Caribbean Studies Two Term Senior Thesis 1

Course Units: 0.0

LAS 499 - Latin American and Caribbean Studies Two Term Senior Thesis 2

Course Units: 2.0 **CC:** WS

Latin

LAT 101 - Beginning Latin 1

Course Units: 1.0 An elementary course introducing all major forms and syntax, with some easy reading from classical authors. **CC:** HUM, JCHF, JWOL **ISP:** LAW

LAT 102 - Beginning Latin 2

Course Units: 1.0 Continuation of LAT 101 **Prerequisite(s):** LAT 101 or one year of secondary school Latin. **CC:** LCCL, HUM, JCHF, JWOL **ISP:** LAW

LAT 103 - Latin Reading

Course Units: 1.0 Reading in a wide variety of classical Latin poetry and prose. **Prerequisite(s):** LAT 102 or its equivalent. **CC:** LCCL, HUM, JCHF, JLIT, JWOL **ISP:** LAW

LAT 230 - Catullus and Horace

Course Units: 1.0 Readings in Catullus and Horace, emphasizing vocabulary and syntax review. Traditions and social context of lyric poetry are also studied. **Prerequisite(s):** LAT 103 or two years of secondary school Latin. **CC:** HUL, LCC, HUM

LAT 237 - Latin Epic

Course Units: 1.0 Readings in Ovid's *Metamorphoses*, Lucan, and others. May be repeated with change in author. The genre, its development and history will be studied. **Prerequisite(s):** LAT 103 or two years of secondary school Latin. **CC:** HUL, LCC, HUM

LAT 240 - Vergil's Aeneid

Course Units: 1.0 The purpose of this course is twofold. Our first objective will be to obtain greater proficiency in reading Latin. Through primary readings in their original Latin, students will increase their knowledge of vocabulary, grammar, and syntax. Our second objective will be to read Vergil's Aeneid with a critical eye. What is epic? What is Rome's answer to Homer trying to accomplish? We will consider the political implications of the Aeneid. In addition to close study of selections in Latin, we will read the entire work in English. **Prerequisite(s):** LAT 103 or two years of secondary school Latin. **CC:** HUL, LCC, HUM

LAT 242 - Mythology in Latin Literature

Course Units: 1 This course will examine how ancient Roman authors wrote their own versions of ancient myths. We will read a selection of texts in Latin from Vergil's Georgics and Ovid's Fasti, Heroides, and Metamorphoses, among others. We will visit mythical landscapes, hear from gods and mortals, and review Latin grammar, too. As we read these texts, we will consider issues of power dynamics, status, and gender in Rome, as well as practice what it means to engage in critical translation. **Prerequisite(s):** LAT 103 or any LAT course. **CC:** HUL, LCC, JCHF, JLIT, JWOL **ISP:** GSW

LAT 245 - Lucan's Bellum Civile

Course Units: 1.0 After a review of the representation of Caesar in Vergil's Aeneid and Ovid's Metamorphoses, we will proceed directly to the Pharsalia (now more commonly called the Bellum Civile), Lucan's dark epic of the bitter war Julius Caesar waged against Rome in his successful quest to topple republican government, seize power, and establish a personal dictatorship. In addition to the study of the epic genre, its development, and its history, students will scan dactylic hexameter, learn about ancient Rome, review Latin grammar, and write a seminar report based on the evidence that they gather from Lucan's text. **CC:** HUL, LCC, HUM

LAT 338 - Lyric and Elegiac Poetry

Course Units: 1.0 Extensive readings from the poems of Propertius, Tibullus, and Ovid. May be repeated with change in author. **Prerequisite(s):** LAT 103 or two years of secondary school Latin. **CC:** HUL, LCC, HUM

LAT 339 - Roman Satire

Course Units: 1.0 Readings in Horace, Petronius, and Juvenal. The origins and development of the genre will also be studied. May be repeated with change in author. **Prerequisite(s):** LAT 103 or two years of secondary school Latin. **CC:** HUL, LCC, HUM

LAT 341 - Roman Historiography

Course Units: 1.0 Readings in Sallust, Livy, Tacitus, and others to accompany study of the origins and development of Roman historiographical literature. May be repeated with change in author. **Prerequisite(s):** LAT 103 or two years of secondary school Latin. **CC:** HUL, LCC, HUM

LAT 343 - Roman Drama

Course Units: 1.0 Readings in Plautus and Terence along with selections from Seneca. May be repeated with change in author or texts. **Prerequisite(s):** LAT 103 or two years of secondary school Latin. **CC:** HUL, LCC, HUM, WAC

LAT 345 - Cicero

Course Units: 1.0 A selection from Cicero's massive literary output, with emphasis on his speeches and letters. May be repeated with changes in texts. **Prerequisite(s):** LAT 103 or two years of secondary school Latin. **CC:** HUL, LCC, HUM **ISP:** LAW

LAT 358 - Medieval Latin Literature and Culture

Course Units: 1.0 Latin in the Middle Ages was Western Europe's international language of ideas, politics, and literature. It was the language not only of the Bible and the Church, but also of satirists and historians, heretics and mystics, poets and storytellers. Their writings are the vital link between Classical antiquity and the modern literatures of Europe. Students sample this vast literature through readings in the original and become acquainted with the social,

intellectual, and cultural climate that produced it. Throughout the course, students develop their Latin reading skills (with attention to the differences between Classical and later Latin). Readings cover a range of authors from St. Augustine to the Arch-poet and may include autobiography, letters, history, visionary literature, philosophy, lyric poetry, hymns, drinking songs, Bible texts and interpretations, legends, encyclopedias, allegorical poetry, and political theory. **Prerequisite(s):** LAT 103 or two years of secondary school Latin. **CC:** HUL, LCC, HUM **ISP:** REL

LAT 371 - Reading Rome: Textual Approaches to the City

Course Units: 1.0 The purpose of this course is twofold. Our first objective will be to obtain greater proficiency in reading Latin. Through primary readings in their original Latin, you will increase your knowledge of vocabulary, grammar, and syntax. The second objective will be to study the literary topography of ancient Rome. We will consider Rome as a palimpsest, tracing the city's changes. Through our examination of sites-in-ink, we will consider how Roman identity and power relations are constructed through the city and its monuments. **CC:** HUM, LCC

LAT 447 - Latin Prose Composition

Course Units: 1.0 Practice in composing Latin prose, based on classical authors, and the study of prose style through a wide variety of texts from archaic to vulgar Latin. **Prerequisite(s):** At least one Latin course above 103, four years of secondary school Latin, or permission of the instructor. **CC:** HUM, LCC

LAT 490 - Latin Independent Study 1

Course Units: 1.0 Advanced individual study of a special author or subject, or of Latin prose composition. **Prerequisite(s):** Six courses in Latin or the equivalent.

LAT 491 - Latin Independent Study 2

Course Units: 1.0 Advanced individual study of a special author or subject, or of Latin prose composition. **Prerequisite(s):** Six courses in Latin or the equivalent.

LAT 492 - Latin Independent Study 3

Course Units: 1.0 Advanced individual study of a special author or subject, or of Latin prose composition. **Prerequisite(s):** Six courses in Latin or the equivalent.

LAT 497 - Latin Senior Project

Course Units: 1.0 One term senior project. Advanced individual study of a special author or subject, or of Latin prose composition. **CC:** WS

LAT 498 - Latin Senior Thesis 1

Course Units: 0.0 Independent reading and thesis in the field of Latin language and/or literature. **Prerequisite(s):** Permission of the department chair.

LAT 499 - Latin Senior Thesis 2

Course Units: 2.0 Advanced individual study of a special author or subject, or of Latin prose composition. **Prerequisite(s):** LAT 498 **CC:** WS

Mechanical Engineering

MER 010 - Seminar

Course Units: 0.0 Discussion of special topics in mechanical engineering important to professional development such as current engineering practices, engineering ethics, codes and standards and intellectual property. Required for all ME majors during the Fall and Winter terms of their Senior year and Spring term of their Junior year as part of the process of selecting their senior writing experience.

MER 101 - Engineering Graphics

Course Units: 1.0 Engineering graphics with emphasis on engineering drawings, introduction to solid modeling, and manufacturing. Topics include sketching, descriptive geometry, tolerances, sectioning, auxiliary views, assembly drawings, CAD, and manufacturing techniques. **Corequisite(s):** MER-101L **CC:** SET, GCAD

MER 201 - Statics

Course Units: 1.0 A basic engineering mechanics course concerned with the equilibrium of non-deformable bodies at rest or moving with a constant velocity on a straight path. Free body diagrams, Newtonian mechanics, vectors and the calculus are used to solve problems throughout the course. Topics include force vectors and systems, equilibrium, trusses, frames, friction, center of gravity, centroids, moments of inertia and fluid hydrostatics. **Prerequisite(s):** [PHY 120 and (MTH 112 or MTH 113)] or IMP 120

MER 212 - Dynamics

Course Units: 1.0 A basic engineering mechanics course concerned with the kinematics and kinetics of non-deformable particles and two dimensional bodies undergoing acceleratory motion. D'Alembert free body diagrams, Newtonian mechanics, energy approaches, vectors and the calculus are used to solve problems throughout the course. Topics include kinematics, force and acceleration, work and energy principles and impulse and momentum principles. Includes a design component. **Prerequisite(s):** MER 201 and (MTH 115 or IMP 121)

MER 213 - Material Science

Course Units: 1.0 A basic engineering science course dealing with crystal structure, imperfections in solids, diffusion, mechanical properties of metals, dislocations and strengthening mechanisms, phase diagrams, phase transformations in metals, structure and properties of ceramics, and polymeric structures. The principles formulated in materials science allow engineers to understand the nature and behavior of a wide variety of engineering materials. Includes a laboratory component. **Prerequisite(s):** CHM 101

MER 214 - Mechanics of Materials 1

Course Units: 1.0 A branch of applied mechanics that deals with the behavior of solid bodies subjected to various types of loading. The solid bodies considered in this course include axially-loaded members, shafts in torsion, thin shells, beams, and structures that are assemblies of these components. Strength of materials analysis determines the stresses, strains, and displacements produced by the loads. Includes a laboratory component. **Prerequisite(s):** MER 201 and MER 262 **Corequisite(s):** MER 214L **CC:** WAC

MER 231 - Thermodynamics 1

Course Units: 1.0 A basic engineering science course dealing with relations between heat and other forms of energy. Topics include: basic thermodynamic principles, properties of simple substances, energy and the first law of thermodynamics, entropy and the second law of thermodynamics, and ideal cycle analysis. Elementary environmental economic and sustainability considerations related to thermodynamic processes. **Prerequisite(s):** PHY 120 & (MTH 112 or MTH 113) or IMP 120. **Corequisite(s):** CHM 101 **CC:** ENS

MER 232 - Thermodynamics 2

Course Units: 1.0 Application of the fundamental laws of thermodynamics to the analysis of energy conversion devices, systems, and processes. The course moves beyond MER 231 through the analyses of more realistic power-producing and refrigeration systems, systems in which there are more than one substance present, and reactive systems. Factors that govern energy conversion processes and impact on the efficiency of those processes are studied with attention given to environmental and sustainability implications. **Prerequisite(s):** MER 231, CHM 101.

MER 262 - Programming and Writing in ME

Course Units: 1 Project-based sophomore-level course for mechanical engineers that integrates three fundamental skills required for successful mechanical engineering communication: library research, data analysis, and scientific writing. The course teaches searching, interpreting, and communicating mechanical engineering literature. The basics of analyzing large
engineering datasets using MATLAB code are covered, including visualization and numerical differentiation/integration. Conventions of writing in mechanical engineering are practiced through writing assignments based on analysis of large datasets. **Corequisite(s):** MER 201 or MER 231 **CC:** WAC-R

MER 291 - Sophomore Practicum 1

Course Units: 0.0 Any mechanical engineering undergraduate can practice their profession on a part-time basis, for credit, through participation in either (1) undergraduate research or (2) a design project sanctioned by the department. To receive Pass/Fail credit equivalent to one free elective course, the student must earn three terms worth of passing grades for the practicum experience. Credit for up to two free elective courses may be earned in this way

MER 292 - Sophomore Practicum 2

Course Units: 0.0 Any mechanical engineering undergraduate can practice their profession on a part-time basis, for credit, through participation in either (1) undergraduate research or (2) a design project sanctioned by the department. To receive Pass/Fail credit equivalent to one free elective course, the student must earn three terms worth of passing grades for the practicum experience. Credit for up to two free elective courses may be earned in this way. **Prerequisite(s):** MER 291

MER 293 - Sophomore Practicum 3

Course Units: 1.0 Any mechanical engineering undergraduate can practice their profession on a part-time basis, for credit, through participation in either (1) undergraduate research or (2) a design project sanctioned by the department. To receive Pass/Fail credit equivalent to one free elective course, the student must earn three terms worth of passing grades for the practicum experience. Credit for up to two free elective courses may be earned in this way. **Prerequisite(s):** MER 292

MER 295H - Honors Independent Project 1

Course Units: 0.0 First half of a two-term, one credit project, with a professor of the student's choosing. This course is graded pass/fail. **Prerequisite(s):** By permission of instructor.

MER 296H - Honors Independent Project 2

Course Units: 1.0 **Prerequisite(s):** By permission of instructor.

MER 297H - Mechanical Engineering Honors Independent Project

Course Units: 1

MER 301 - Engineering Reliability

Course Units: 1.0 Engineering statistics; uncertainty analysis, data collection, computational statistics, probability, statistical inference, confidence limits, tolerance intervals, analysis of variance, least squares regression, and introduction to design of experiments. **Prerequisite(s):** MTH 115 or IMP 121. **CC:** SET

MER 302 - Optimal Design

Course Units: 1.0 Introduction to theory and application of computational (and experimental) methods used to optimize performance of engineering systems. These methodologies will be discussed in the context of practical applications ranging from structural shape optimization and robotics to material selection and design for assembly. Special emphasis will be given to translating the design into mathematical terms addressable by these general methods. **Prerequisite(s):** MER 214, CSC 10X **CC:** SET

MER 303 - Space Flight

Course Units: 1.0

The basics of getting into space, traveling about in space and returning to Earth or landing on another celestial body will be studied in this course. Topics will include orbital motion and trajectories, time of flight, rocket vehicle dynamics, orbital elements, interplanetary transfers and planetary fly bys.
Prerequisite(s): MER 212 **CC:** SET

MER 311 - Mechanics of Materials 2

Course Units: 1.0 Advanced topics in structural analysis including unsymmetric bending and deflection of beams, energy methods, torsion of noncylindrical members, stress and strain transformations, failure criteria, fracture mechanics, fatigue and column buckling. **Prerequisite(s):** MER 213, MER 214 **CC:** SET

MER 312 - Mechanisms and Machines

Course Units: 1.0 Linkage analysis and synthesis, cam design, machine dynamics, computer aided kinematic design, kinetics and balancing. Includes a design component **Prerequisite(s):** MER 212 **CC:** SET

MER 322 - Dynamics of Physical Systems

Course Units: 1.0 Time and frequency response of lumped-parameter mechanical, electrical, and fluid systems. Open-loop and closed-loop controllers are briefly covered, with an introduction on PID controller design. Includes a lab component. **Prerequisite(s):** CSC 10X or equivalent, MER 212, (ECE 222 or ECE 225), MER 262 & (MTH 130 or MTH 234). **Corequisite(s):** MER 322L **CC:** WAC

MER 331 - Fluid Mechanics 1

Course Units: 1.0 Analysis of fluid systems according to the control volume formulations of Newton's second law and the conservation laws of mass and energy. Both differential and integral analysis approaches are taught. Includes study of hydrostatics, dimensional analysis, boundary layers, Bernoulli's equation, head loss and piping systems, and lift and drag forces. Includes a laboratory component. **Prerequisite(s):** MER 231, MER 262 ,MTH 117 or IMP 121 **Corequisite(s):** MER 212 and MER 331L **CC:** WAC

MER 332 - Fluid Mechanics 2

Course Units: 1.0 This course will provide a survey of several important areas of fluid mechanics not covered in MER 331. Topics covered in this course may include: differential analysis of fluid flow (Navier-Stokes equations), potential flow analysis, microfluidics, compressible flow analysis and computational fluid dynamics. As part of the course students will complete a project on a fluids topic of their choice. **Prerequisite(s):** MER 331 **CC:** SET

MER 333 - Heat Transfer Analysis and Design

Course Units: 1.0 Study of the different modes of heat transfer through the development and application of rate equations for quantifying conduction, convection, and thermal radiation heat transfer. Theory and applications are reinforced and complemented by a laboratory component of the course. **Prerequisite(s):** MER 232 ,MER 331 and (MTH 130 or MTH 234) **Corequisite(s):** MER 333L **CC:** SET

MER 354 - Advanced Materials

Course Units: 1.0 Advanced materials for engineers are introduced with a focus on the properties and applications of the materials. Several advanced materials currently in the research and development stage will also be introduced with a discussion of the needed infrastructure to bring the materials to production. Topics include composites, engineering alloys, microelectromechanical systems (MEMS) devices, nanomaterials, semiconductors and microelectronic fabrication, and superconductors. **Prerequisite(s):** Prerequisite: MER 213 or by permission of the instructor. **CC:** SET

MER 356 - Aerospace Structures

Course Units: 1 An introduction to the analysis and design of aerospace structures. Topics include airframe loads, airworthiness, fatigue, material selection, structural idealization, selections of airfoil and fuselage shapes and the stress analyses of wings, fuselages, connections and other components. **Prerequisite(s):** MER 214

MER 357 - Applied Math for Engineering

Course Units: 1 This course introduces students to a wide range of numerical methods to solve various engineering problems, as well as the use of computers to simulate such systems using numerical mathematical software, particularly MATLAB. Some of the topics in this course include: (1) Eigenvalues and eigenvectors and their physical meaning in systems, (2) partial differential equations, (3) Fourier and Taylor series, (4) numerical solutions of boundary-value and initiate-value problems, (5) numerical differentiation and integration, and (6) numerical error quantification. **Prerequisite(s):** MTH-130 or MTH-234 and MER-212

MER 362 - Manufacturing Processes

Course Units: 1.0 This course aims to provide students with fundamentals of manufacturing processes and their interrelationships with product design and material properties. This course treats manufacturing practices through three primary elements: i) Material properties and their role in manufacturing, ii) Manufacturing processes analysis and

selection for sustainable manufacturing, and iii) Manufacturing design, practice and integration. This course incorporates traditional manufacturing process design and selection, behavior and manufacturing property of materials, computer-aided manufacturing, emerging additive manufacturing. **Prerequisite(s):** MER 101, MER 213 MER 214 **CC:** SET

MER 371 - Internal Combustion Engines

Course Units: 1.0 This course provides a basic introduction to reciprocating Internal combustion (IC) engines. Idealized underlying thermodynamic cycles (e.g. Otto, Diesel, and Miller) and the mechanisms used to produce them will be covered. Deviations from the ideal cycles will be discussed in depth. Introductory coverage of petroleum based fuel chemistry, combustion, and emissions is included. **Prerequisite(s):** MER 232 **CC:** SET

MER 419 - Design of Mechanical Systems

Course Units: 1.0 A capstone design experience for the mechanics area of mechanical engineering program. Students work in teams on challenging design projects with special focus on the design of mechanical devices and systems. **Prerequisite(s):** MER 262 ,MER 311, MER 312 **CC:** SET, WAC

MER 421 - Mechatronics Design

Course Units: 1.0 This course emphasizes the fundamental technologies on which contemporary mechatronic designs are based; sensors and actuators, system dynamics and control, analog and digital electronics, microcontroller technology, interface electronics and real-time programming. The laboratory sessions focus on, hands-on design projects in which small teams of students configure, design, and implement a succession of mechatronic subsystems, leading to system integration in a final project. **Prerequisite(s):** MER 212, ECE 222 or ECE 225, and CSC 10X or equivalent. **CC:** SET

MER 439 - Design of Thermal/Fluid Systems

Course Units: 1.0 A capstone, project-oriented course in the thermal-fluids area of mechanical engineering that applies design techniques to the design of thermal fluid processes and systems. Students work in teams on projects that involve the design of piping systems, heat exchangers, thermodynamic cycles, and other thermal fluid systems. **Prerequisite(s):** MER 232, MER 333 **CC:** WAC, WS

MER 452 - Composite Materials Technology

Course Units: 1.0 A comprehensive introduction to composite materials and motivation for their use in modern applications. Topics include selection and availability of composite materials, manufacturing processes, usable theoretical concepts, testing and characterization of composites, and strength theories. **Prerequisite(s):** MER 213 and MER 311 **CC:** SET

MER 471 - Solar Energy Analysis and Design

Course Units: 1.0 Analysis and design applicable to the use of solar energy for heating, cooling, and electric power generation. Solar geometry, solar collector positioning, energy storage, and component and system design. **Prerequisite(s):** MER 333 or by permission of instructor. **CC:** SET **ISP:** ENS

MER 485 - Competition Team 1

Course Units: 1.0 Students participating at the level of senior designer and/or system design lead on a departmentally approved engineering design competition team (Aero Team, Mini Baja Team, or Rocket Team). Specific design responsibilities must be approved by the team faculty adviser prior to registration. Weekly meetings with team faculty advisor are required, as is travel to and participation in the competition. Registration requires approval of team faculty adviser who will grade the student. Course counts as a Free Elective. **Prerequisite(s):** Senior standing, permission of instructor and MER 311 or MER 333 **Corequisite(s):** MER 010 , MER 311 and MER 333

MER 486 - Competition Team 2

Course Units: 1.0 Students participating at the level of senior designer and/or system design lead on a departmentally approved engineering design competition team (Aero Team, Mini Baja Team or Rocket Team). The student must have senior standing. The student's specific design responsibilities must be approved by the team's faculty adviser prior to registration. Weekly meetings with faculty advisors are required, as is travel to and participation in the design competition. **Prerequisite(s):** MER 311 or MER 333 . Registration requires approval of the selected team's faculty adviser who will grade the student. **Corequisite(s):** MER 010 , MER 311 and MER 333

MER 486H - Competition Team 2 - Honors

Course Units: Option to MER 486 for those competition team students seeking department honors. **Prerequisite(s):** MER 311 or MER 333 . Registration requires approval of the selected team's faculty adviser who will grade the student. **Corequisite(s):** MER 010 , MER 311 , MER 333

MER 490 - Independent Study

Course Units: 1.0 Offered with department approval only.

MER 491 - Upper-class Practicum 1

Course Units: 0.0 Any mechanical engineering undergraduate can practice their profession on a part-time basis, for credit, through participation in either (1) undergraduate research or (2) a design project sanctioned by the department. To receive Pass/Fail credit equivalent to one free elective course, the student must earn three terms worth of passing grades for the practicum experience. Credit for up to two free elective courses may be earned in this way.

MER 492 - Upper-class Practicum 2

Course Units: 0.0 Any mechanical engineering undergraduate can practice their profession on a part-time basis, for credit, through participation in either (1) undergraduate research or (2) a design project sanctioned by the department. To receive Pass/Fail credit equivalent to one free elective course, the student must earn three terms worth of passing grades for the practicum experience. Credit for up to two free elective courses may be earned in this way. **Prerequisite(s):** MER 491

MER 493 - Upper-class Practicum 3

Course Units: 1.0 Any mechanical engineering undergraduate can practice their profession on a part-time basis, for credit, through participation in either (1) undergraduate research or (2) a design project sanctioned by the department. To receive Pass/Fail credit equivalent to one free elective course, the student must earn three terms worth of passing grades for the practicum experience. Credit for up to two free elective courses may be earned in this way. **Prerequisite(s):** MER 492

MER 497 - Senior Project 1

Course Units: 1.0 Capstone design project or research project, performed either independently or in special cases with other students, under the supervision of one or more of the department faculty. Minimum requirements include one oral report and one written progress report. Consult the Mechanical Engineering department for additional minimum requirements. **Prerequisite(s):** MER 311 or MER 333 **Corequisite(s):** MER 010, MER 311 and MER 333 .

MER 498 - Senior Project 2

Course Units: 1.0 Continuation of MER 497. Minimum requirements include one oral report, one written final project report, and one poster. Consult the Mechanical Engineering department for additional minimum requirements. **Prerequisite(s):** MER 311 , MER 333 and MER 497 **Corequisite(s):** MER 010 **CC:** WS

MER 499 - Senior Project 3

Course Units: 1.0 Optional follow-on to MER 498 for students who wish to go above and beyond their completed objectives for MER 497 , MER 498 . Can be counted as a free elective. **Prerequisite(s):** MER 498, permission of the MER 498 project advisor.

Modern Languages & Literatures

MLL 490 - Academic Training Practicum 1

Course Units: 0.0

This course will cover diverse second language acquisition methodologies and approaches to the teaching and learning of foreign languages with technology. Students will learn to design pedagogically sound activities to become effective and skilled language assistants and instructors. Students will also learn and practice how to design and implement curriculum, lessons, and assignments including assessments.
Course is open only to Language Assistants. MLL 490 and MLL 491 must be taken simultaneously over 3 terms to receive 2 credits.

MLL 491 - Academic Training Practicum 2

Course Units: 0.0

This course will cover diverse second language acquisition methodologies and approaches to the teaching and learning of foreign languages with technology. Students will learn to design pedagogically sound activities to become effective and skilled language assistants and instructors. Students will also learn and practice how to design and implement curriculum, lessons, and assignments including assessments.
Course is open only to Language Assistants. MLL 490 and MLL 491 must be taken simultaneously over 3 terms to receive 2 credits.

MLT 221 - Monsters in French Cinema

Course Units:

MLT 222 - Haunted Histories: Trauma in the Caribbean

Course Units:

MLT 240 - Resilient Voices in Ukrainian Literature: Defiance, National Identity and Triumph Over Imperial Arrogance

Course Units: This course explores Ukrainian literature's engagement with two of the United Nations' global challenges: human rights and refugees. We focus on the history of human rights and refugees in Ukraine and explore issues of empire and nation in Ukrainian authors' lives and works. We also discuss contemporary women Ukrainian writers' documentation of human rights violations and the plight of refugees amidst Russia's war on Ukraine. Throughout the term, we will explore essential questions that intersect with our topic, including: What is a false claim? How do we identify false claims? **CC:** HUL, HUM, LCC, GCHF, GLIT, WAC

MLT 295H - Mod Lit in Tran Honors Ind Stu

Course Units: 1

MLT 350T - Exploring Armenian Identity, Internship: History, Culture, Geopolitics

Course Units: This course examines the diverse influences that shape contemporary Armenian identity. Specifically, we will examine the role of history, language, religion, culture and geopolitics in identity formation. Through critical inquiry you will explore narratives of Armenian identity and witness the remarkable process of adaptation and transformation shaping the nation today. This course also includes an internship component in Armenia. **CC:** HUL, LCC, HUM, JCHF, JLIT, WAC

Modern Literature in Translation

MLT 150 - Islam in West-Africa: Ahmadou Bamba's Murid Tariqa as a case study

Course Units: 1 This course examines Islam in West Africa through the lens of Ahmadou Bamba (1853-1927), a Sufi religious figure whose life experiences, works, and teachings shed light on the history and development of Islam in the region. The differences between honotheism and monotheism will be explored. The course also focuses on Ahmadou Bamba as an avant-gardist in the non-violence movement and the decolonization project often attributed to Black intellectuals such as Senghor, Césaire, and Damas, the the co-founders of the
Negritude movement in the 1930s. **ISP:** AFR

MLT 340 - Grounding in German Texts

Course Units: 1 This course will explore an array of perspectives implied by the term "ground" and how these perspectives define the human relationship to the world. The ground offers a complicated and sometimes controversial focal point for a consideration of human activity. Many possible correlates of "ground" in German-the terms "Grund," "Boden," and "Erde," for example-include semantic fields that extend to reason, basis, territory, soil, earth, and world. Through the examination of perspectives ranging from metaphorical, to philosophical, to material, we will investigate how the ground functions in diverse contexts, forming at times the basis for human exceptionality, becoming the great unifier of organic and inorganic matter, and finally setting the scene for a decentering of an anthropocentric understanding of the world. Readings and discussion in English. **Cross-Listed:** GER 341

Mathematics

MTH 051 - Cryptology: The Mathematics of Secrecy

Course Units: 1.0 The course will focus on the mathematical aspects of public-key cryptography, the modern science of creating secret ciphers (codes), which is largely based on number theory. Additional topics will be taken from cryptanalysis (the science of breaking secret ciphers) and from contributions that mathematics can make to data security and privacy. **Note:** Not open to students who have passed (or have AP credit for) a college calculus course. **CC:** QMR **ISP:** STS

MTH 056 - History of Mathematics

Course Units: 1.0 Traces the development of mathematical ideas and methods in literate cultures from ancient Egypt and Mesopotamia, to Hellenistic Greece and medieval China, India and the Islamic world, up through the dawn of calculus at the start of the Scientific Revolution in early modern Europe. Topics include the interlinked changes and intercultural transmission of basic numeracy, arithmetic, geometry, trigonometry, algebra, practical computation and approximation, and concepts of the infinitely large and small. **Note:** Not open to students who have passed (or have AP credit for) a college calculus course. **CC:** QMR, JDQR **ISP:** STS

MTH 060 - Mathematics and Politics

Course Units: 1.0 A mathematical treatment (not involving calculus or statistics) of escalation, political power, social choice, and international conflict. No previous study of political science is necessary, but PSC 111 or PSC 112 would be relevant. **Note:** Not open to students who have passed (or have AP credit for) a college calculus course. **Cross-Listed:** PSC 123 **CC:** QMR **ISP:** STS

MTH 061 - Math in the Public Interest

Course Units: 1.0 In what ways do advertisers, politicians, and other propagandists try to trick the public by exploiting our ignorance of or aversion to mathematical reasoning? This course explores key mathematical topics related to these questions, drawing on fields such as probability, statistics, combinatorics, mathematical modeling, and mathematical visualization. We will examine them in the context of contemporary public policy issues, such as climate change, demography, gambling, sports and public health. **Note:** Not open to students who have passed (or have AP credit for) a college calculus course. **CC:** QMR

MTH 062 - Mathematics of Election and Polls

Course Units: 1.0 One part of this course will cover polling, answering questions such as: were the 2016 U.S. Presidential election polls as inaccurate as often reported? What are margins of error, exactly? How many people must be surveyed for accurate results? Which people? To help answer these questions, the course will include background material on probability and statistics. Another part will be on voting theory, where we will look into designing elections from scratch, in search of the "best" system for converting the preferences of the voters into an election winner. This will lead to voting paradoxes and a discussion of Arrow's impossibility theorem. Throughout the course, we will draw on many examples of voting, such as the U.N. Security Council, the election of popes, the academy awards, infamous historical elections, and the U.S. presidential election. Additional topics will be chosen from gerrymandering, Congressional seat apportionment, and game theory. **Note:** Not open to students who have passed (or have AP credit for) a college calculus course. **CC:** QMR, GDQR

MTH 063 - Mathematics of Sustainability

Course Units: 1 Sustainability addresses the idea of a global society founded on respect for nature, universal human rights, economic justice, and a culture or peace. It is of vital importance and will affect everyone. Mathematics is essential in identifying and analyzing the challenges. Through a sequence of sustainability and mathematical concepts, exercises, and projects, you will be brought along on this journey and confront global challenges to develop an understanding of the complex environmental, economic, and sociocultural interlinkages, and to empower yourself to

become an active citizen. **Note:** Not open to students who have passed (or have AP credit for) a college calculus course. **CC:** QMR, GDQR **ISP:** STS

MTH 076 - Mathematics and Democracy

Course Units: 1 In this course, we will assess democracy through multiple perspectives, most centrally through mathematics. In particular, we will ask ourselves essential questions such as: How can we measure and quantify democracy? How can quantitative methods enable us to analyze the concepts of fairness and bias, and also, what are their limitations? How can (and should) math play a vital role in upholding the essential democratic tenets of access, participation, and human rights? Throughout the course, we will use mathematical notation and terminology to represent real-world issues. **CC:** QMR, JDQR

MTH 105 - Differential Calculus with Precalculus

Course Units: 1.0 Differential calculus of functions of a single variable, supplemented with supporting precalculus. Limits, continuity, differentiation, and applications. **CC:** QMR **ISP:** ENS **Note:** Not intended for students with credits for MTH 059 ,MTH 110 , MTH 113 , MTH 110P or MTH 113P.

MTH 110 - Calculus 1: Differential Calculus

Course Units: 1.0 Differential calculus of functions of a single variable. Limits, continuity, differentiation, computational aspects of Maclaurin and Taylor polynomials and series, and applications. **Note:** Not intended for students who have passed MTH 059 ,MTH 105 , MTH 113 , MTH 110P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

MTH 115H - Enriched Differential Vector Calculus

Course Units: 1 **CC:** QMR

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

MTH 127 - Numerical Methods

Course Units: 1.0 Newton's method, numerical differentiation and integration, solution of ordinary differential equations, error estimates. **Prerequisite(s):** MTH 115 and fluency in some mathematical programming language.

MTH 128 - Probability

Course Units: 1.0 This course is a survey of the basic concepts of probability theory including permutations and combinations, conditional probability, Bayes' formula, independence, discrete and continuous random variables, expectation and variance, the Central Limit Theorem, and selected topics. **Cross-Listed:** STA 128 **Prerequisite(s):** One of MTH 112, MTH 113, MTH 112P, MTH 113P, IMP 120, or IMP 121. **Note:** Not open to students who have passed or are taking MTH 199. Students who intend to minor in Mathematics or Financial and Actuarial Mathematics, or major in Mathematics should take MTH 228 /STA 228, as credit is not normally given for both MTH 128/STA 128 and MTH 228 /STA 228.

MTH 130 - Ordinary Differential Equations

Course Units: 1.0 Topics include first and second-order differential equations and first-order systems, including analytic, geometric, and numerical techniques, classification of first-order linear systems by eigenvalues, forcing and resonance, and the Laplace transform. Applications include but are not limited to population models, RC circuits, and damped and undamped harmonic oscillators. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 **Note:** Not open to students who have passed MTH 234 . **CC:** GDQR

MTH 140 - Applied Linear Algebra

Course Units: 1.0 Linear algebra has an enormous number of applications to the sciences and engineering. This course will cover the basics of linear algebra in Euclidean n-space, including linear systems, linear transformations, determinants, eigenvalues and eigenvectors, orthogonality, and the singular value decomposition. An emphasis will be placed on applications, chosen from least-squares fitting, linear programming, image compression, Markov chains and discrete dynamical systems, computer graphics, principal component analysis, the Google PageRank algorithm, and others. Computer software such as MATLAB or Mathematica will be used in this course to perform numerical calculations. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 . **Note:** Credit will not normally be given for both MTH 140 and MTH 340 . Exceptions require approval of a proposal from the student to the department chair.

MTH 197 - Discrete Mathematics for Computer Science

Course Units: 1.0 An introduction to fundamental concepts and methods of proof in mathematics and computer science. Topics include elementary logic, functions, relations, sets, and basic combinatorics. **Note:** Not open to students who have passed MTH 199 . **CC:** QMR

MTH 199 - Introduction to Logic and Set Theory

Course Units: 1.0 Designed to enable the student to develop the ability to understand and communicate mathematical arguments. Logic and set theory from the core. Selected topics are covered at the discretion of the instructor. For those considering any form of mathematics major, the department recommends that Math 199 be taken by fall term of the sophomore year, if possible. **Note:** Credit is not normally given for both MTH 197 and MTH 199. MTH 115 is

usually taken before MTH 199. **Prerequisite(s):** One of MTH 112, MTH 113 ,MTH 115 , MTH 115H, MTH 117 , IMP 120 or permission of the department chair. **CC:** WAC, WAC-R

MTH 219 - Topics in Discrete Mathematics

Course Units: 1.0 Topics may include graph theory, partially ordered sets, algebraic coding theory, computational complexity, number theory. **Prerequisite(s):** MTH 199 or permission from the Chair.

MTH 221 - Mathematical Cryptology

Course Units: 1.0 An in-depth look at the mathematical theory underlying modern methods to accomplish the secret transmission of messages, as well as other tasks related to data security, privacy, and authentication. **Note:** Not normally open to students who have passed MTH 235 or MTH 051. **Prerequisite(s):** MTH 199 or permission from the Chair. **CC:** GDQR **ISP:** STS

MTH 224 - Geometry

Course Units: 1.0 Topics in transformation geometry, or projective, affine, Euclidean, and/or non-Euclidean geometries. **Prerequisite(s):** MTH 199 or permission from the Chair.

MTH 227 - Financial Mathematics

Course Units: 1 This course covers the fundamentals of financial mathematics. We will apply mathematical concepts to calculating present and accumulated values for various streams of cash flows. We will learn the terminology associated with these calculations including simple and compound interest. We will examine various financial instruments including annuities, loans, bonds, stocks and interest rate swaps, and how these instruments can be used to solve various needs. The focus of the class is on being able to solve problems and perform relevant calculations. **Cross-Listed:** ECO 227 **Prerequisite(s):** ECO 101 and MTH 112 or MTH 113 .

MTH 228 - Probability Theory

Course Units: 1.0 An introduction to the theory of probability. Discrete and continuous random variables. Jointly distributed random variables, sums of random variables and properties of Expectation. Moment generating functions, inequalities, and Limit Theorems. Focus will be on both the theoretical aspects of probability and problem solving. Discussion of some of the probability problems encountered in actuarial, financial, and scientific fields. **Prerequisite(s):** MTH 197 or MTH 199 and MTH 117 (MTH 117 can be taken concurrently), or permission from the Chair. Note: Not open to students who have passed MTH 128 /STA 128 .

MTH 234 - Differential Equations

Course Units: 1.0 Topics include differential equations and models, asymptotic solutions, eigenvalues and eigenvectors, classification of planar systems, higher-dimensional linear algebra, canonical form, linear and nonlinear systems, and applications. **Prerequisite(s):** MTH 115 and MTH 199, or permission from the Chair. **Prereq/Corequisite(s):** Not open to students who have passed MTH 130. **CC:** GDQR

MTH 235 - Number Theory

Course Units: 1.0 Properties of natural numbers including divisibility, prime numbers, congruences, special number theoretic functions and quadratic reciprocity. **Prerequisite(s):** MTH 199 or permission from the Chair. **Prereq/Corequisite(s):** MTH 235 normally is closed to students who have passed MTH 221 .

MTH 238 - Methods of Applied Mathematics

Course Units: 1.0 An introduction to the fundamental concepts and techniques in applied mathematics. Topics may include dimensional analysis, scaling, perturbation theory, boundary layer analysis, differential and integral equations, calculus of variations, optimization, and eigenvalue problems. The emphasis is the use of mathematics to quantify and solve problems arising from physical, chemical, biological, and economic phenomena. **Prerequisite(s):** MTH 130 or MTH 234 and MTH 197 or MTH 199

MTH 248 - Intermediate Topics in Mathematics

Course Units: 1.0 An exploration into topics chosen from different areas of pure mathematics, this course is divided into three sequential units, each taught by a different instructor. The topics are 1) convex geometry (including convex sets, linear and affine spans, simplices, and applications to Nash's Bargaining Theorem in Game Theory); 2) continued fractions and their use in number theory, such as in solving linear Dophantine equations and in finding rational approximations to real numbers; 3) introduction to analysis (sequences, series, convergence tests, complex series, and Euler's formula). Students will receive a single grade for the entire course. **Prerequisite(s):** MTH 199 or permission from the Chair. **Note:** Not normally open to students who have completed MTH 257 or MTH 336 by the end of the term, except by permission of the math department Chair. **CC:** QMR

MTH 295H - Mathematics Honors Independent Project 1

Course Units: 0.0

MTH 296H - Mathematics Honors Independent Project 2

Course Units: 1.0

MTH 297H - Mathematics Honors Independent Project 3

Course Units:

MTH 325 - Knot Theory

Course Units: 1.0 An introduction to the mathematical study of knots, including colorability, chirality, genus, and the Jones polynomial. Course will also explore the relationship between mathematical knots and structures in molecular chemistry and biology, and physics. **Prerequisite(s):** One of MTH 221, MTH 235, MTH 332, or MTH 340, or permission of the Chair.

MTH 329 - Mathematical Statistics

Course Units: 1 An exploration of the mathematics underlying commonly applied statistical methods, such as hypothesis testing, confidence intervals, experimental design, and regression. Covers the key concepts of the theory of: point estimation, maximum likelihood estimates, sampling, hypothesis testing, power of a test, confidence intervals, linear regression, experimental design and analysis of variance, goodness of fit, and nonparametric tests. **Cross-Listed:** STA 329 **Prerequisite(s):** MTH 228

MTH 332 - Abstract Algebra 1

Course Units: 1.0 Algebraic structures including groups, rings and fields. **Prerequisite(s):** One of MTH 219 , MTH 221 , MTH 224 , MTH 228 , MTH 235, MTH 248 or permission from the Chair.

MTH 334 - Partial Differential Equations

Course Units: 1.0 Partial differential equations (PDEs) are formulated to describe a wide range of phenomena in engineering, natural and social sciences. We will study the theories and models of PDEs. Analytical and numerical methods are introduced to examine the solutions of elliptic, parabolic, and hyperbolic types of PDEs. Topics include the formulation of PDEs using conservation laws, classification, solution methods for the wave, diffusion, and Laplace equations, boundary value problems, separation of variables, Green's functions, Fourier series and transforms, stability and convergence. Students will be exposed to both theoretical and applied aspects. Computing tools (such as Mathematica or Mathlab) will also be introduced. **Prereq/Corequisite(s):** MTH 234 or (MTH 130 + MTH 199), or permission from the Chair.

MTH 336 - Real Analysis

Course Units: 1.0 An introductory course in analysis. Completeness and Cauchy sequences; open, closed, connected, and compact sets; continuous functions, uniform continuity, and uniform convergence; the extreme and intermediate value theorems; differentiation and the mean value theorem; Riemann integration and the fundamental theorem of calculus. Additional topics may be covered, including the contraction mapping principle and sets of measure zero. **Prerequisite(s):** MTH 332 or MTH 340 or permission from the Chair.

MTH 340 - Linear Algebra

Course Units: 1.0 Vector spaces, linear transformations, inner product and dual spaces, eigenvalues and eigenvectors, special topics. **Prerequisite(s):** One of MTH 115, MTH 115H or IMP 121 and one of MTH 219, MTH 221, MTH 224, MTH 228 , MTH 235, MTH 248 , or permission from the Chair. **Note:** Credit will not normally be given for both MTH 140 and MTH 340. Exceptions require approval of a proposal from the student to the department chair.

MTH 430 - Complex Analysis

Course Units: 1.0 An introduction to analytic functions of a complex variable. **Prerequisite(s):** One 300-level MTH course or permission from the Chair.

MTH 432 - Abstract Algebra 2

Course Units: 1.0 Continuation of MTH 332. Certain topics will be selected for more intensive study. **Prerequisite(s):** MTH 332

MTH 436 - Topology

Course Units: 1.0 Topological spaces, connectedness, compactness, continuous mappings and homeomorphisms. **Prerequisite(s):** One 300-level MTH course or permission from the Chair.

MTH 437 - Real Analysis 2

Course Units: 1.0 A second course in real analysis. Topics may include the construction of Lebesgue measure and the Lebesgue integral, limit theorems and Fubini's theorem, differentiation in several variables and the inverse and implicit function theorems, and convergence of series of functions. **Prerequisite(s):** MTH 336 and MTH 340 , or permission from the Chair.

MTH 448 - Differential Geometry

Course Units: 1.0 A study of curves and surfaces in 3-space. Topics include arc length, curvature, torsion, the Frenet frame, the first and second fundamental forms, normal curvature, and Gaussian curvature. . **Prerequisite(s):** MTH 117 and MTH 340, or permission from the Chair.

MTH 480 - Foundations of Mathematics

Course Units: 1.0 Propositional and predicate logic, Godel completeness theorem, introduction to recursion theory. **Cross-Listed:** PHL 480 **Prerequisite(s):** MTH 332 or permission from the Chair. **CC:** HUM

MTH 487 - Senior Writing Seminar

Course Units: 1.0 This course is required by, and limited to, seniors who are not satisfying their WS requirement through either a one- or two-term thesis. The seminar will provide a forum in which students continue their study of a common upper-level mathematical topic (exact choice of topic will depend on term and instructor) and explore a new related topic independently. Students will gain experience in giving oral presentations and writing mathematical papers. **Prerequisite(s):** Admission by application only. **CC:** WS

MTH 490 - Mathematics Independent Study 1

Course Units: 1.0 Independent study in a particular area of mathematics under the supervision of a faculty member.

MTH 491 - Mathematics Independent Study 2

Course Units: 1.0 Independent study in a particular area of mathematics under the supervision of a faculty member.

MTH 492 - Mathematics Independent Study 3

Course Units: 1.0 Independent study in a particular area of mathematics under the supervision of a faculty member.

MTH 493 - Mathematics Independent Study 4

Course Units: 1.0 Independent study in a particular area of mathematics under the supervision of a faculty member.

MTH 494 - Mathematics Independent Study 5

Course Units: 1.0 Independent study in a particular area of mathematics under the supervision of a faculty member.

MTH 495 - Mathematics Independent Study 6

Course Units: 1.0 Independent study in a particular area of mathematics under the supervision of a faculty member.

MTH 496 - Mathematics Independent Study 7

Course Units: 1.0 Independent study in a particular area of mathematics under the supervision of a faculty member.

MTH 497 - Mathematics One Term Senior Thesis

Course Units: 1.0 **CC:** WS

MTH 498 - Mathematics Two-Term Senior Thesis 1

Course Units: 0.0

MTH 499 - Mathematics Two-Term Senior Thesis 2

Course Units: 2.0 **CC:** WS

Philosophy

PHL 100 - Introduction to Philosophy

Course Units: 1.0 An introduction to some of the most enduring questions of philosophy: Does God exist? Might the external world be an illusion? Is science rational? What is the relationship between the mind and the body? What is it to be moral, and why should one bother? **CC:** HUM

PHL 105 - Introduction to Ethics

Course Units: 1.0 An introduction to traditional normative ethical theories, which attempt to provide a rationally defensible account of morally right and wrong conduct and morally good and bad character, and consideration of the challenges posed to these theories by ethical relativism and feminist ethics. **CC:** HUM **ISP:** LAW

PHL 110 - Moral Problems

Course Units: 1.0 An introduction to ethics by considering how a wide variety of reality-based examples of complex and controversial ethical issues might be resolved in a rational manner. **CC:** HUM **ISP:** LAW

PHL 123 - Values and Economic Justice

Course Units: 1.0 This class considers the goals economic policy might pursue and how different theories of the good lead to particular choices about desirable or undesirable economic policies. We consider mainstream economic thinking, which has roots in utilitarianism and liberalism, and alternative ideas such as libertarianism, Austrian economics, feminist, communitarian, and religious philosophy and economics. We apply these ideas to relevant policy issues, such as free trade, globalization, unemployment, income distribution, affirmative action, care of the environment, health care, and famine relief. **Cross-Listed:** ECO 123 **CC:** HUM, JSPE

PHL 125 - Introduction to Logic and Critical Thinking

Course Units: 1.0 A course in informal logic, with a very brief introduction to elementary formal logic. Students will learn to identify, analyze and evaluate English-language arguments in areas ranging from the sciences to current affairs to the law. **CC:** HUM, GSPE

PHL 155 - Seventeenth and Eighteenth Century European Philosophy

Course Units: 1.0 An introduction to philosophy by way of some of the most important European philosophical works of the Seventeenth and Eighteenth Centuries. **CC:** HUM

PHL 160 - Nineteenth and Twentieth Century Philosophy

Course Units: 1.0 An exploration of some of the major trends in the philosophy of the 19th and 20th centuries focusing especially on contemporary skepticism, cultural relativism, the crisis of faith and morality, language, and the metaphysics of truth, as reflected in the contemporary philosophical movements of existentialism, analytic philosophy, phenomenology, and postmodernism. **CC:** HUM

PHL 167 - Chinese Philosophy

Course Units: 1.0 An introductory survey of Confucianism, Daoism, Moism, Yin Yang, Legalism, Neo-Confucianism and Neo-Daoism. Among the theories covered in the course are Confucian theories of self-cultivation, the superior person and human nature, Menzi's theory of original human goodness, Xunzi's theory of evil human nature, Daoist theories of non-action, harmony with nature, and law of reversion, and Moist theories of universal love and non-discrimination. Many of these Chinese theories shaped Chinese civilization for over two millennia. **CC:** HUM, LCC **ISP:** REL

PHL 180 - Theories of the Good Life

Course Units: 1.0 This course takes a cross-cultural approach to theories of the good life by studying ancient Greek, Chinese, African and Hindu theories, as well as more modern versions of these theories. In class, we shall analyze and debate these theories in terms of their underlying beliefs about human nature and in terms of whether someone can actually live by these theories. **CC:** HUM, LCC **ISP:** REL

PHL 205 - Relativism

Course Units: 1.0 Relativism is not just a 'theoretical' issue: the Events of 9/11 have pitted those who demand 'moral clarity' against those who urge 'more understanding'. Moral disagreement is not limited to conflicts between cultures: democratic societies attempt to accommodate points of view which conflict and diverge, sometimes nearly to the point of violence, as debates on abortion or gay marriage or the separation of church and state, or even taxation, show. But relativism is also an important theoretical issue as it raises questions about truth, justification of belief and moral skepticism. We explore these theoretical, moral and political dimensions through reading of theorists such as Rawls, Nagel, Harman, Thomson, Gutmann, and others. One philosophy course prerequisite or permission of the instructor **CC:** HUM **ISP:** LAW

PHL 216 - Introduction to Indian Philosophy

Course Units: 1.0 An introductory survey of Hinduism, Buddhism, Jainism and Carvaka. Over the centuries, Indian philosophers inquired into the nature of reality and mind, debated epistemological issues concerning the criteria for valid knowledge, proposed paths for attaining spiritual liberation, and developed social theories for the welfare of people. Methods used by Indian philosophers include meditation, yoga, reasoning, logic, debate and observation. Some of these methods will be explored in class. **CC:** HUM, LCC **ISP:** REL

PHL 217 - Africana Political Policy

Course Units: 1 This course focuses on modern African political philosophy, from a global perspective. In particular, we will consider African philosophy's critique of modern politics, which divides people into smaller and more individual identities, and consider the concepts of community, solidarity, and unity found in African traditions. We will focus on philosophers connected to Pan-Africanism, and read figures such as Kwasu Wiredu, Kwame Gyekye, C. L. R. James, W. E. B. Du Bois, Frantz Fanon, Amílcar Cabral, Claudia Jones, and Angela
Davis. **CC:** HUM **ISP:** AFR

PHL 219 - 19th Century Continental Philosophy

Course Units: 1 This course examines the beginnings of 'continental' philosophy, a broad tradition that began in the 19th century on mainland Europe. In particular, we will focus on the reactions of German Idealist philosophers like Hegel to the Enlightenment philosophies of Rousseau and Kant, and on subsequent reactions to German Idealism from radical philosophers like Kierkegaard, Marx, and Nietzsche. Questions to be explored include: What is a 'Self,' or 'subject,' and how is it different from mere objects? What kind of freedom can humans have? Is freedom realizable within our material and social reality? **CC:** HUM,

PHL 221 - Love, Sex & Desire

Course Units: 1 Many of us spend a lot of time thinking about, talking about, worrying about, and fantasizing about love, sex, and desire. One way or another, they are central to the human experience. But how much do we really know about love, sex, and desire? In this class, we will read philosophers who have thought a lot about these concepts. Through readings and class discussions, we will explore what these concepts really mean-or what we think they should mean, taking an intersectional approach to examining some of the complicated and complex ethical questions that surround these concepts. **CC:** HUM, JSPE

PHL 222 - Sports and Games

Course Units: 1 This course will introduce students to philosophical work about sports and games. Topics to be covered include the nature and value of sports and games; lying and cheating in sports and games; the ethics of performance enhancing drugs; racism, sexism, and transphobia in sports and games; and gender separation in sports and games, especially scholastic sports. **ISP:** GSWS

PHL 231 - Symbolic Logic

Course Units: 1.0 An introduction to modern symbolic logic, focusing on translation, semantics and syntax for propositional and predicate logic. You will learn to translate natural language into the language of logic and vice versa, and study key concepts such as validity, consistency, proof, soundness and completeness. **CC:** HUM, QMR **ISP:** LAW

PHL 232 - Philosophy of Science

Course Units: 1.0 An introduction to philosophy of science. What are scientific theories, and how are they tested? What is scientific method? What counts as evidence for a scientific theory? What is scientific explanation? We will approach these questions both philosophically and through formal techniques. **CC:** HUM **ISP:** STS

PHL 233 - Early Modern Philosophy

Course Units: 1.0 An examination of some of philosophy's "Greatest Hits," from some of the 17th and 18th centuries' greatest thinkers: Descartes, Leibniz, Locke, Berkeley, Hume, and Kant. We will consider questions like: Is there a God, and how could we know? Is your mind just your brain, or do you have an immaterial soul? What is free will, and are we just fooling ourselves when we think we have it? Does your subjective perception of the world correspond to how it is in reality, and how can you possibly know? Are there universal moral duties, which everyone has an obligation to follow regardless of their personal inclinations? **CC:** HUM **ISP:** STS

PHL 237 - Introduction to Political Philosophy

Course Units: 1.0 An historical introduction to issues in political philosophy. The texts that we will consider address questions such as: Why should individuals live in society at all? Why should individuals obey any government at all? What are the sources, limits and purposes of political power? **CC:** HUM **ISP:** LAW

PHL 239 - Latin American Philosophy

Course Units: 1 This course will examine some of the most important texts from the history of Latin American philosophy. Topics discussed will include human rights, colonialism, feminism, national identity, race and racism, and the barbarism-civilization dichotomy. **CC:** HUM, LCC, JCHF, JSPE

PHL 245 - Buddhist Ethics

Course Units: 1.0 Ethics is one of the three main components of the Buddhist path, the others being meditation and wisdom. In the centuries following the Buddha's death, two main branches of Buddhism developed: Theravada Buddhism and Mahayana Buddhism. The older school, Theravada, emphasized moral guidelines and meditation practices that culminate in nirvana; the Mahayana school emphasized a morality of compassion and a metaphysical theory of emptiness. In the contemporary period, Buddhists are concerned about issues relating to the environment, social justice, war, medicine and health, gender, and race. Buddhist ethical theories emphasize selflessness, moral discipline, compassion, karma and awareness. This course draws from ancient ethical texts as well as contemporary works on applying basic Buddhist principles to today's moral problems. **CC:** HUM, LCC **ISP:** REL

PHL 246 - Art, Media, and Society

Course Units: 1.0 An examination of the traditional aesthetic theories of philosophers such as Plato, Aristotle, Burke, Hume, Schopenhauer, and Nietzsche, as well as more recent theories. Among the issues considered will be how art is different from everyday objects and the impact of technology on art. **CC:** HUM

PHL 248 - Philosophy and Current Affairs

Course Units: 1.0 "Public philosophy" tests the prospects and limits of philosophy as a means of analyzing events and conditions of current interest. We will select an issue, such as affirmative action, the politics of religion, minority rights, the entertainment industry, etc., and track it both in the scholarly and the popular media (newspapers, television, etc.). **CC:** HUM

PHL 250 - Ethical Theory

Course Units: 1.0 Theories such as utilitarianism, pure obligation theory, virtue-ethics, and enlightened self-interest theory propose to provide defensible methods for answering questions about right and wrong. The course examines traditional theories (Aristotle, Hobbes, Kant, Mill, etc.) and contemporary theories (Harman, Rawls, Wolf, Nagel, Gauthier) on issues such as moral skepticism and truth, rational self-interest, care as the basis of ethics, the diversity of moral beliefs, moral trump cards, etc. **CC:** HUM **ISP:** LAW

PHL 251 - Introduction to Ancient Greek Philosophy

Course Units: 1.0 An examination of issues debated by ancient Greek and Roman philosophers that became central to western philosophy, including the nature of reality, the criteria for knowledge, the difference between good and pleasure, and the principles of political justice. Discussion of readings from the Pre-Socratics, Plato, Aristotle, the Epicureans and the Stoics **Cross-Listed:** CLS 150 **CC:** HUM, GCHF

PHL 255 - On War and Killing

Course Units: 1.0 The central goal of this course is to develop and apply some useful tools for critical reflection upon the morality of war. In considering this issue we will focus on two main questions: (i) that of *jus ad bellum* - what, if

anything, makes it right to go to war?, and (ii) that of *jus in bello* - what kinds of actions are, and are not, justified in carrying out a war? **CC:** HUM

PHL 261 - Philosophy of Religion

Course Units: 1.0 Current research in philosophical theology about language, possible worlds, and evidence used to address issues such as whether moral obligation can depend upon God's will, whether God's power is limited by the possible, whether God owns us, whether it is reasonable to bet on the existence of God. **CC:** HUM **ISP:** REL

PHL 262 - Problem of Evil

Course Units: 1.0 Some actions are bad. Some actions are very bad. Some actions are very, very, very bad. Are there, in addition, actions which are evil? In other words, does "evil" mark out a form of wrongdoing that is qualitatively different from the bad or is it simply a synonym for "bad" or at most a term we reserve for marking a merely quantitative difference between bad and very bad actions? Much turns on how we decide to answer these questions - concerning both the nature of morality and of the world we inhabit. **CC:** HUM

PHL 263 - Philosophy of Gender and Race

Course Units: 1.0 This course will introduce students to the philosophy of gender and the philosophy of race, with an eye to both theoretical issues and to issues that apply to our everyday lives within a social and political context. **Cross-Listed:** N/A **CC:** HUM **ISP:** AFR, GSW

PHL 265 - Minds and Machines

Course Units: 1.0 Is it possible to build a computer that effectively simulates human intelligence? If we did so, would the computer really be intelligent, or would it merely seem to be: Would the computer have free will? Do we have free will, or is human freedom merely an illusion? Do we have immaterial souls that can survive the deaths of our bodies and brains? In this advanced introduction to the philosophy of mind, we will consider these and other questions about what it means to have a mind, and about the relationship between mind and the brain. **CC:** HUM **ISP:** STS

PHL 266 - Philosophy in Literature

Course Units: 1.0 An examination of the connections between the two disciplines. **CC:** HUL, HUM

PHL 268 - Introduction to Metaphysics

Course Units: 1 This course will introduce students to metaphysics, the branch of philosophy that deals with fundamental questions about reality. Questions to be explored include: What are races and genders? Do people have free will? Do the past and future exist, or only the present? Is it possible to travel backwards in time? Are there any things that exist that aren't physical, such as numbers and works of music? Are people physical or mental? Both? Neither? Assuming that you existed ten years ago, how is that possible given all of the changes that have happened to you? Does God exist? **CC:** HUL, HUM

PHL 273 - Environmental Ethics

Course Units: 1.0 An exploration of the ethical and philosophical ideas that have shaped attitudes toward the environment and toward non-human species. **CC:** HUM **ISP:** ENS, STS

PHL 274 - Biomedical Ethics

Course Units: 1.0 An introduction to ethical problems in biology and medicine, touching on such issues as reproductive ethics (abortion, cloning), research ethics, the ethics of death and dying (assisted suicide, euthanasia) and similar subjects. **CC:** HUM **ISP:** STS

PHL 295H - Philosophy Honors Independent Project 1

Course Units: 0.0

PHL 296H - Philosophy Honors Independent Project 2

Course Units: 1.0

PHL 297 - The Ethics of Forgiveness and Revenge

Course Units: 1.0 Examination of different ways of responding to wrongdoing. When is revenge appropriate and why? When is forgiveness appropriate and why? **CC:** HUM

PHL 301 - Racism & Enlightenment

Course Units: 1 This course will examine the ethical and political theories of the European Enlightenment with a focus on their historical connection to racism and racial oppression. In the first half of the course, we will study three iconic thinkers from the Enlightenment: John Locke, David Hume, and Immanuel Kant. In the second half, we will investigate the following questions: What role did racial prejudice play in these philosophers' works? How did they inspire racist thinking? Given these historical connections to racism, how should we engage with their works in the present? **CC:** HUM, WAC, JCHF, JSPE

PHL 311 - Plato's Republic

Course Units: 1.0 Most people care deeply about justice and strive to live just lives. But what is justice and why should we try to be just? What if we always do the right thing, but we are constantly treated badly and as if we are untrustworthy? Should we be just even if others think we are dishonest and corrupt? Is justice worth pursuing for itself? If justice is good how do we make our cities and our fellow citizens just? What kind of ruler would make a city just? In this course we will try to answer these questions as we work our way through Plato's most famous work, Republic. Each class will be organized around specific question(s). We will focus most of our attention on analyzing and interpreting Plato's answer to these questions, but we will also try to answer these questions ourselves and see whether or not we agree with Plato. **Cross-Listed:** CLS 311 **CC:** HUM

PHL 337 - Gender Issues in Buddhism

Course Units: 1 **ISP:** GSWS

PHL 338 - Zen and Tibetan Buddhism

Course Units: 1.0 Mahayana Buddhist philosophy explains the nature of reality as emptiness, which means that the nature of reality is beyond (and thus empty of) words, concepts and characteristics. Mahayana Buddhism also regards compassion as the primary motivation for ethics. This course focuses on the metaphysical theories of two schools of Mahayana Buddhist philosophy: Chinese/Japanese Zen Buddhism and Tibetan Buddhism. The course examines Zen Buddhist theories of No-Self and the nature of mind that makes sudden enlightenment possible, as well as Tibetan Buddhist theories of interdependent arising and emptiness. This course is applicable to the Asian Studies and Religious Studies majors. **CC:** HUM, LCC **ISP:** REL

PHL 341 - The Contemporary Crisis of Truth

Course Units: 1.0 A study of 20th century European or American philosophies: phenomenology, existentialism, or analytic philosophy. **CC:** HUM **ISP:** AMS

PHL 342 - Aristotle

Course Units: 1.0 Aristotle is one of the most influential philosophers in the Western world. His impact spans centuries, influencing ancient Greek and Roman thought, medieval Christian, Arabic, and Jewish thinkers, and even today's philosophers and intellectuals. In this class we will focus mostly on his contribution to metaphysics, philosophy of mind, epistemology, and ethics. What is the nature of reality? How do we come to have knowledge? What constitutes a good human life? These are just some of the questions that we will discuss in the course. **Cross-Listed:** CLS 242 **CC:** HUM

PHL 343 - Metaphysics: On What There Is

Course Units: 1.0 An examination of such topics as determinism and free will, causation, time, personal identity, necessity and possibility, objectivity, and God **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM

PHL 344 - Advanced Political Philosophy

Course Units: 1.0 This course concentrates on issues in contemporary political philosophy. **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM

PHL 359 - Postmodernism

Course Units: 1.0 Do some groups control the way we use language? Is discourse male-dominated or Euro-centric? Postmodern theories investigate the nature of language, as well as questions concerning power and language: How is power gained and controlled through discourse, the media and other cultural institutions? Postmodern theories have had an impact on contemporary literature, art, and media theory. Readings by Structuralist and Postmodern thinkers, such as Saussure, Barthes, Foucault, Cixous, Irigaray, and Derrida will be discussed. **Cross-Listed:** WGS 359 **Prerequisite(s):** One philosophy course or permission of the instructor. **CC:** HUM

PHL 365 - Philosophy of Mind

Course Units: 1.0 Critical examination of some central issues in the philosophy of mind, including the mind/body problem, the problem of other minds, "intelligent" machines, and animal minds. **CC:** HUM

PHL 374 - Advanced Biomedical Ethics

Course Units: 1.0 An advanced historically based introduction to biomedical ethics. Among the subjects treated will be the relationship between bioethics and traditional medical ethics, the evolution of the discourse, core concepts, models, theories and organizational infrastructure of bioethics, including IRBs and ethics committees. The course is designed to serve as a foundation for graduate work in bioethics and to fulfill the required knowledge competencies recommended by the American Society of Bioethics and Humanities in its 1998 report Core Competencies for Health Care Ethics Consultation. **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM **ISP:** STS

PHL 376 - Philosophy of Law/Jurisprudence

Course Units: 1.0 An advanced course in jurisprudence. Primary topics include: the nature of law and legal reasoning in general; the nature of criminal law, including both the role of excuses in the criminal law and the aims and justification of criminal punishment; and the nature of tort law, including both the relationship between negligence and liability and the relationship between causation and liability **Prerequisite(s):** One philosophy course or permission of the instructor. **Prereq/Corequisite(s):** One course from the Philosophy department. **CC:** HUM

PHL 388 - Skepticism East and West

Course Units: 1.0 For as long as there have been philosophers engaged in passionate pursuit of knowledge, there have been skeptics critical of the entire enterprise. Can we really know the Truth about anything? For that matter, how important is it for us to know the Truth? Skeptical thinkers have appeared in all times and cultures. We will engage with three venerable texts: the Zhuangzi from ancient China, Nagarjuna's writings on the Middle Way from ancient India, and the Outlines of Skepticism by Sextus Empiricus from ancient Greece. Our goal is to put these authors into dialogue and then join in that dialogue. **CC:** LCC

PHL 408 - New Directions in Philosophy

Course Units: 0.0 Preparation for biweekly talks by visiting philosophers and development of writing skills. This course extends over two terms. Only one course credit is given. Required of philosophy and interdepartmental majors. During the first term, students sign up for 408; during the second, for 418. Both 408 and 418 may be taken during any year. Because 408 carries no credit, students should register for it in conjunction with three other full-credit courses. Seniors who have not otherwise satisfied their Senior Writing Requirement may do so by taking this course.

PHL 418 - New Directions in Philosophy

Course Units: 1.0 Preparation for biweekly talks by visiting philosophers and development of writing skills. This course extends over two terms. Only one course credit is given. Required of philosophy and interdepartmental majors. During the first term, students sign up for 408; during the second, for 418. Both 408 and 418 may be taken during any year. Because 408 carries no credit, students should register for it in conjunction with three other full-credit courses. Seniors who have not otherwise satisfied their Senior Writing Requirement may do so by taking this course. **CC:** HUM, WS

PHL 445 - Seminar in Metaphysics

Course Units: 1.0 May be repeated, if topic changes. **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM, WS

PHL 446 - Seminar in Epistemology

Course Units: 1.0 Spring Topic: Topics in Philosophy Mind. **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM, WS

PHL 447 - Advanced Logic

Course Units: 1.0 May be repeated, if topic changes. **Prerequisite(s):** PHL 231 or permission of instructor. **CC:** HUM, WS

PHL 448 - Seminar in Ethics or Value Theory

Course Units: 1.0 **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM, WAC or WS **Note:** Course may be repeated, if topic changes.

PHL 450 - Hume's Challenge to Reason

Course Units: 1.0 In the eighteenth century, David Hume issued a series of challenges to human reason that ever since have been at the center of much of Western Philosophy. Hume argued that the fundamental principles of philosophy, science, and even morality are based not on reason but on instincts and emotions. This course examines Hume's challenge and how philosophers after Hume (such as Reid, Shepherd, and Kant) have tried to address it. **CC:** HUM, WAC-R, WS

PHL 456 - Seminar: Aristotle on the Soul

Course Units: 1 **Note:** Course can be repeated. Please reach out to the department for additional information.

PHL 462 - Philosophy of Language

Course Units: 1.0 An examination of key concepts in the philosophy of language, such as truth, meaning, reference, definite descriptions, names, demonstratives, and propositional attitudes. The fundamental question: How does language connect us to the world? **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM, WS

PHL 490 - Philosophy Independent Study 1

Course Units: 1.0 Selected topics in philosophy. **Prerequisite(s):** Permission of the instructor.

PHL 491 - Philosophy Independent Study 2

Course Units: 1.0 Selected topics in philosophy. **Prerequisite(s):** Permission of the instructor.

PHL 492 - Philosophy Independent Study 3

Course Units: 1.0 Selected topics in philosophy. **Prerequisite(s):** Permission of the instructor.

PHL 493 - Philosophy Independent Study 4

Course Units: 1.0 Selected topics in philosophy. **Prerequisite(s):** Permission of the instructor.

PHL 498 - Philosophy Honors Thesis 1

Course Units: 0.0 Substantial two-term written project on a specific philosophical topic, under the direction of an advisor, culminating in an honors thesis. Philosophy 498 carries 0 credits. Upon completion of PHL 499 the student receives two course credits. Normally taken in the senior year.

PHL 499 - Philosophy Honors Thesis 2

Course Units: 2.0 Substantial two-term written project on a specific philosophical topic, under the direction of an advisor, culminating in an honors thesis. PHL 498 carries 0 credits. Upon completion of PHL 499 the student receives two course credits. Normally taken in the senior year. **Prerequisite(s):** PHL 498 **CC:** WS

Physics

Physics Courses

Common Curriculum Courses
Courses numbered in the 050's are designed particularly for non-science majors seeking to satisfy Common Curriculum requirements, and all of these courses carry Common Curriculum credit. They may not be counted toward the major in physics or toward any other science or engineering major, but may count toward an interdepartmental major (see requirements for Physics, B.S.).

PHY 010 - Physics and Astronomy Seminar

Course Units: 0.0 Discussion of special topics in physics and astronomy relevant to senior research projects and professional development. Attendance at Physics and Astronomy seminars is required. Required for all Physics and Astronomy Majors and co-requisite for PHY 490 and PHY 493 . Students must pass PHY 010 to receive a passing grade in PHY 490 or PHY 493.

PHY 100 - Exploring Physics & Astronomy

Course Units: 1.0 Team-taught course introducing physics at Union. Topics covered may include astronomy, astrophysics, atomic and molecular physics, biophysics, computational physics, laser physics, quantum measurement, nuclear and particle physics, solid-state physics, and statistical physics. **Prerequisite(s):** Department chair permission required. **CC:** SET **Note:** PHY 100 does not satisfy any major requirements.

PHY 110 - Physics for the Life Sciences 1

Course Units: 1.0 An introduction to classical mechanics, fluids, and thermodynamics with applications in the life sciences. Students must major in a life science or be admitted by permission of the instructor. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **Corequisite(s):** PHY 110L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

PHY 111 - Physics for the Life Sciences 2

Course Units: 1.0 An introduction to electromagnetism, optics, and the structure of matter with applications in the life sciences. **Prerequisite(s):** PHY 110 , PHY 120 ,MTH 102 , MTH 112 ,or MTH 113 **Corequisite(s):** PHY 111L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

PHY 122 - Relativity, Quantum, and Their Applications

Course Units: 1.0 Calculus-based introduction to the structure of matter, including quantum effects, particle, nuclear, atomic, molecular, and solid state physics, and applications to materials of interest to engineers and scientists. **Prerequisite(s):** PHY 121 IMP 113 or IMP 121 . **Corequisite(s):** PHY-122L **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

PHY 123 - Heat and Light

Course Units: 1.0 Calculus-based introduction to thermodynamics, geometric and physical optics, and astrophysics. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 121 or IMP 121 . **CC:** ENS

PHY 200 - Molecular Biophysics

Course Units: 1.0 Selected topics in molecular biophysics including an overview of proteins, nucleic acids, viruses and bacteria, with an emphasis on molecular structure and functioning. Experimental techniques used in modern biophysical research included in the course are various optical spectroscopies and microscopies, as well as hydrodynamic methods (sedimentation, diffusion, viscosity, electrophoresis), NMR, and x-ray diffraction. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 , and some exposure to biology or permission of the instructor.

PHY 210 - The Physics of Modern Medicine: Applications in Imaging, Surgery and Therapy

Course Units: 1.0 This course introduces the technologies used in modern medicine and the basic physical principles that underlie them. Topics will include: laser surgery, ultrasound imaging, laparoscopic surgery, diagnostic x-ray imaging, nuclear medicine, computed tomography (CAT) scans, magnetic resonance imaging (MRI) scans, and radiation therapy. Safety issues involved in the use of each technique will be considered in depth, and discussions will include societal implications of the growing use of technology in medicine. Specific medical applications discussed will include (but are not limited to): colon cancer screening, arthroscopic knee surgery, laser eye surgery, dermatological laser surgery, obstetrical ultrasound, cardiovascular ultrasound, mammography, osteoporosis screening, cancer radiation therapy, and applications of PET and MRI brain scans in neuroscience. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 , or permission of the instructor. **CC:** WAC

PHY 220 - Relativity and Introduction to Quantum Mechanics

Course Units: 1.0 A second course in modern physics covering special relativity and an introduction to quantum mechanics. Topics include relativistic kinematics, relativistic dynamics, four-vector notation, relativistic collisions, origins of quantum mechanics, Schrodinger's equation and the development of wave mechanics, applications of wave mechanics in one and three dimensions (step potential, square well, harmonic oscillator), angular momentum operators, the hydrogen atom, Dirac notation and matrix formulation of linear operators, Dirac Delta function, spin angular momentum, measurement theory, and time-independent perturbation theory. **Prerequisite(s):** PHY 122 **CC:** ENS **Lecture/Lab Hours** One hour computational lab each week.

PHY 230 - Intermediate Classical Mechanics

Course Units: 1.0 An analytical treatment of classical mechanics. Topics include motion of a particle in one, two, and three dimensions; planetary motion; collision theory; moving coordinate systems; dynamics of rigid bodies; and the Lagrangian form of the equations of motion. **Prerequisite(s):** PHY 110 or PHY 120 or IMP 120 **Prereq/Corequisite(s):** MTH 117 (pre- or co-requisite), or permission of the instructor. **Lecture/Lab Hours** One hour computational lab each week.

PHY 270 - Intermediate Electromagnetism

Course Units: 1.0 Electric and magnetic fields and potentials; electric and magnetic properties of matter; Maxwell's field equations. **Prerequisite(s):** PHY 121 and MTH 117 or IMP 121 , or permission of the instructor. **Lecture/Lab Hours** One hour computational lab each week.

PHY 295H - Physics Honors Independent Project 1

Course Units: 0.0 Topic to be chosen in consultation with a faculty member and the student's advisor.

PHY 296H - Physics Honors Independent Project 2

Course Units: 1.0 Topic to be chosen in consultation with a faculty member and the student's advisor.

PHY 300 - Methods of Modern Experimental Physics

Course Units: 1.0 A laboratory-based course dealing with contemporary techniques in experimental physics. **Prerequisite(s):** PHY 122 and one physics course at the 200-level or higher, or permission of the instructor. **CC:** WAC **ISP:** ENS

PHY 310 - Advanced Topics in Physics 1

Course Units: 1.0 Course topic for each year to be chosen from the following: Computational Physics: A laboratory-based course providing practical tools to solve computational physics problems drawn from a wide range of areas, including classical mechanics, electromagnetism, special relativity, and quantum mechanics. Algorithms include root-finders, integration techniques, Monte Carlo methods, ordinary and partial differential equation solvers, numerical Fourier transforms, minimization tools, and numerical linear algebra algorithms. Condensed Matter Physics: An introduction to the microscopic structures and to the electrical and thermal properties of metals, insulators, and semiconductors. Topics include the description of crystal lattices, electrons in a periodic potential, electronic band theory, phonons and their interactions with electrons, cohesive energy of solids, defect states, and superconductivity. Modern Physical Optics: Interference, diffraction and polarization of light, interaction of light and matter, classical and quantum description of optics, and lasers. Three-hour lab each week. Nuclear/Elementary Particle Physics: An introduction to both nuclear and particle physics covering basic nuclear structure and properties, nuclear models, nuclear decay and radioactivity, nuclear reactions, fission, fusion, accelerators, elementary particle physics, and the quark model. Statistical Mechanics: Probability theory, laws of thermodynamics, kinetic theory of gases and the statistical basis of thermodynamics, Bose Einstein and Fermi Dirac distributions, applications to simple fluids, magnetic systems, metals, photons, and superfluid helium. Advanced Electromagnetism: Relativistic electrodynamics, electromagnetic radiation and waves. Quantum Optics: The study of the interaction of light and matter in systems where the wave nature of matter and the particle nature of light must be taken into account. Topics may include single-photon interference, correlated photons and the EPR paradox, quantum computing, quantum cryptography and quantum teleportation, atom optics and atom interferometry, laser cooling and Bose-Einstein Condensation, and implications of quantum mechanics for nanomaterials and nanodevices. Electronics: A laboratory course in basic electronics and instrumentation for science majors. Topics include AC and DC circuits, diodes, rectifiers, transistors, operational amplifiers, binary logic, Boolean algebra, digital circuits, analog-digital conversion, transducers, and computer interfacing. Six hours of lab each week. Others depending upon student interest. **Prerequisite(s):** Course open to juniors and seniors only. Enrollment by permission of the instructor. **ISP:** ENS

PHY 311 - Advanced Topics in Physics 2

Course Units: 1.0 Course topic for each year to be chosen from those listed in Physics 310 depending upon student interest. Course open to juniors and seniors only. Enrollment by permission of the instructor. **Prerequisite(s):** PHY 122 **CC:** WAC

PHY 312 - Advanced Topics in Physics 3

Course Units: 1.0 Course topic for each year to be chosen from those listed in Physics 310 depending upon student interest. Course open to juniors and seniors only. Enrollment by permission of the instructor.

PHY 350 - Advanced Quantum Mechanics

Course Units: 1.0 A second course in quantum mechanics with applications to selected problems in atomic, nuclear, and solid state physics. **Prerequisite(s):** PHY 220 and MTH 117 , or permission of the instructor.

PHY 490 - Physics Two-Term Senior Thesis 1

Course Units: 0.0 The student will normally begin a research project by the fall of the senior year under the supervision of a faculty member; interested students are encouraged to begin research projects earlier in their studies. All students involved in research will meet together once a week with a faculty member who will organize oral reports by the students based on their progress. A written report is required on completion of the project. **Prereq/Corequisite(s):** Completion of PHY 491 earns the total credits.

PHY 491 - Physics Two-Term Senior Thesis 2

Course Units: 2.0 The student will normally begin a research project by the fall of the senior year under the supervision of a faculty member; interested students are encouraged to begin research projects earlier in their studies. All students involved in research will meet together once a week with a faculty member who will organize oral reports by the students based on their progress. A written report is required on completion of the project. **Prerequisite(s):** PHY 490 **CC:** WS

PHY 492 - Physics Senior Thesis 3

Course Units: 1.0 The student will normally begin a research project by the fall of the senior year under the supervision of a faculty member; interested students are encouraged to begin research projects earlier in their studies. All students involved in research will meet together once a week with a faculty member who will organize oral reports by the students based on their progress. A written report is required on completion of the project. **Prerequisite(s):** PHY 491 **CC:** WS (final term)

PHY 493 - Physics Senior Writing Project

Course Units: 1.0 The student will normally begin a research project by the fall of the senior year under the supervision of a faculty member; interested students are encouraged to begin research projects earlier in their studies. All students involved in research will meet together once a week with a faculty member who will organize oral reports by the students based on their progress. A written report is required on completion of the project. **Corequisite(s):** Fall term students attend PHY 490 Lectures. **CC:** WS

PHY 495 - Physics Independent Study 1

Course Units: 1.0 Topic to be chosen in consultation with a faculty member and the student's advisor.

PHY 496 - Physics Independent Study 2

Course Units: 1.0 Topic to be chosen in consultation with a faculty member and the student's advisor.

PHY 497 - Physics Independent Study 3

Course Units: 1.0 Topic to be chosen in consultation with a faculty member and the student's advisor.

PHY 498 - Physics Independent Study 4

Course Units: 1.0 Topic to be chosen in consultation with a faculty member and the student's advisor.

Portuguese

POR 100 - Portuguese for Beginners 1

Course Units: 1.0 Portuguese for Beginners 1 is an engaging class that teaches vocabulary and grammar, improves speaking and pronunciation, reading, writing and listening skills. It offers dynamic language learning environments that explore Brazilian art and culture, history, environmental and social justice, present-day events, and society. The course is designed for students that have been accepted to the Brazil term abroad program and functions as part of the pre-departure preparation. **CC:** HUM

POR 104T - Portuguese Language Studied Abroad

Course Units: 1.0 **(TBD: Staff)** A continuation of Basic Portuguese I. **Prerequisite(s):** POR 100 . See International Programs.

POR 200 - Intermediate Portuguese 1

Course Units: 1.0 **(TBD: Staff)** Intermediate Portuguese I is an intensive and accelerated grammar review, and offers vocabulary growth. This course furthers the development of conversation, reading and writing skills based on a variety of cultural text and authentic cultural artifacts. **CC:** LCCP, HUM

POR 490 - Portuguese Independent Study

Course Units: 1.0 **(TBD: Staff) Prerequisite(s):** Permission of the instructor.

Political Science - Introductory Courses

PSC 111 - Introduction to US Politics

Course Units: 1.0 A broad overview of the operation and issues of central concern in the study of U.S. politics. Particular attention is paid to evaluating the U.S. governing system in relation to major theories of political power, such as elitism, pluralism, and populism. In examining these and other broad concepts there is a focus on the foundations, institutions, and linkage mechanisms (political parties, media, etc.) that play a critical role in U.S. politics. Depending on the instructor, topics covered often include: the founding period, U.S. political culture, civil rights and liberties, money and politics, campaigns and elections, the role of mass media, parties and interest groups, politics in the post 9/11 era, and public policies focusing on crime, foreign affairs, the environment, poverty, health care, and war. **CC:** SOCS, JSPE **ISP:** AMS

PSC 112 - Introduction to Global Politics

Course Units: 1.0 An overview of 21st century dynamics that shape national politics in different regional settings, the behavior of states in the world arena, and how global actors impact each other. Depending on the instructor, topics to be explored could include war, terrorism, political economy, historical perspectives, cultural tensions, nation-building and development, imperialism, democracy, balance of power, human rights, emerging institutions, and the world's ecology. In all sections, attention will be paid to the development of political arguments, the critical use of concepts and theories, and strategies of making judgments about globalization and about the impact of international affairs on domestic politics and vice-versa. **CC:** SOCS, GCHF, GSPE **ISP:** REE

PSC 113 - Introduction to Political Thought

Course Units: 1.0 This course examines key ideas and concepts, as well as "eternal" questions, in the history of western political thought. We will ask controversial questions such as: What is justice? Can we achieve democracy without eliminating poverty? What are the qualities of a good leader? Should we even have leaders? Can women be philosopher-kings? How does class struggle affect the participation of citizens? What are the qualities of a "good" citizen? These questions have been debated for over 2500 years. The debate continues in this course as we learn what the major thinkers said about these issues. **CC:** SOCS **ISP:** LAW

Political Science - Common Curriculum Course

PSC 123 - Topics in Mathematical Political Science

Course Units: 1.0 A mathematical treatment (not involving calculus or statistics) of escalation, political power, social choice, and international conflict. **Cross-Listed:** MTH 060 **Prerequisite(s):** No previous study of political science is necessary, but PSC 111 or PSC 112 would be relevant. **CC:** QMR, SOCS **ISP:** STS

Political Science - Research Methods

PSC 220 - Social Data Analysis

Course Units: 1.0 The analysis of social science data. Emphasis on testing substantive hypotheses by means of computer data processing and statistical techniques. **Cross-Listed:** SOC 201 **Prerequisite(s):** Any introductory social science course; a background in math is not necessary. **CC:** QMR, SOCS **ISP:** ENS

PSC 223 - Critical Comparisons in Politics

Course Units: 1.0 What does a convincing explanation in political science look like? This course will focus on how to make good comparative explanations in political science. We will explore how to do this by studying and applying key concepts, such as culture, social movements, elites, institutions, hegemony, and the state. This course will help prepare students for writing the senior thesis. **CC:** SOCS

Political Science - Comparative Politics

200-level courses in comparative politics generally cover political issues that are regionally concentrated (such as Latin America, Europe, China, and the Middle East), or they focus on themes (such as democracy, nationalism, social movements) that are framed at a conceptual level accessible to students from across the college.

300-level courses in comparative politics have a special topics theme (women and politics, the Marxist political tradition, democratization, genocide, and film) and/or a strong methodological component. The course materials are more conceptually and theoretically complex, and involve a more sophisticated set of intellectual problems.

PSC 201T - Cambodia Study Abroad: Crossing Cultures

Course Units: 1.0 This class is geared towards deepening students' understanding of Cambodian history, culture and contemporary society. During Winter term (prior to the beginning of class in Spring term), there are two weeks of instruction designed to give students academic background on political and economic development, and a brief primer on 20th century and contemporary Cambodian history, politics, economy, and society. However, the core of the class is the experience in-country during spring term. This will consist of classroom study, lectures by in-country experts, excursions to learn and interact with the broader society, and will help students to excel in their internships with local NGOs. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing.

PSC 213 - Contemporary China: Politics, Economy and Society

Course Units: 1.0 A survey course on the politics of the People's Republic of China, with an emphasis on state-society relations. After briefly introducing the Republican and state socialist eras, the heart of the course provides a historical and topical overview of the contemporary political and economic reforms in China. It explores topics in Chinese domestic politics, such as policy-making, center-local relations, inequality, rural transformation, industrialization, village elections, the rule of law and contentious politics, in addition to China's relationship with the outside world, including its integration into the international economy, the environment, energy and foreign policy. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AIS

PSC 216 - Politics in Africa

Course Units: 1.0 This course is designed to introduce students to the essential political history and political dynamics of contemporary Sub-Saharan Africa. By the end of the term, students will have developed an understanding of the process through which the states of contemporary Sub-Saharan Africa emerged; the types of political systems that have evolved in these states; ethnicity and ethnic conflict in Africa; inter and intra-state wars on the continent and their impact; the challenges of economic development and securing prosperity for Africa; and gender and politics, religion and politics, and the politics of terrorism in Africa. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **ISP:** AFR

PSC 240 - Comparative Ethnic and Racial Politics

Course Units: 1.0 An introduction to the trends and patterns of ethnic conflicts in the contemporary world. Issues pertaining to the rise of nations; theories of ethnic mobilization; the attempt to build general, cross-national explanations; and current efforts to solve ethnic conflict. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS **ISP:** AMS, REE

PSC 242 - Comparative Climate Change Politics

Course Units: 1 This year we have seen historic temperature records and heatwaves across the globe, the impacts of wildfires around the country and locally, and periods of drought and extreme storms in different areas. These have been attributed to or amplified by anthropogenic climate change, which is one of the biggest challenges facing society in the 21st century. This course examines why climate change is such a "wicked problem," and why it is so difficult to address effectively. The barriers to addressing climate change are not just technical and scientific, but also political and social. Thinking about a future where we as a society mitigate the worst impacts of climate change this century, and adapt to other impacts entails navigating different political systems around the world and balancing various geopolitical and economic interests. Through this course, we will examine how these factors shape or constrain efforts to

address climate change in Western Europe, the United States, China, India, and other parts of the world. We will also examine how climate change is impacting human life and security in these countries and other parts of the world, and how it may amplify existing inequalities and other crises. **ISP:** ENS, STS

PSC 243 - Latin American Politics

Course Units: 1.0 This course offers a working knowledge of Latin America's current politics, trends, and challenges. Years after democratization, regular elections are in place, and support for democracy in the region seems widespread. Still, as local traditions infuse the principles of liberal democracy, politics in Latin America reveal unique traits. Exploring the political as an interpretive endeavor, the course's readings, assignments, and class discussions will help to identify key political institutions, traditions, and cleavages, as well as forms of agency and leadership, both in specific countries and at the regional level. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** LAS

PSC 244 - The Politics of Extraction in the Americas

Course Units: 1.0 As the shrinking of the Amazon keeps making headlines, extractive activities including large-scale mining, logging, and agriculture are rapidly transforming the landscape of the Americas. This class surveys main extractive activities across the hemisphere, their output and political impact. While feeding expanding markets, extractivism has been linked to land grabs, forced displacement, conflicts, state and paramilitary violence, lobbying, corruption, and coups d'état. In exploring trends and cases, we will review concepts, theories, and alternatives to extractivism, including women and indigenous-led traditions of protecting different forms of life and Earth itself. By taking this course, students will develop informed perspectives regarding which extractive activities may be essential, and whether (and how) they can be done sustainably, as part of the quest to secure a livable future. **Prerequisite(s):** PSC 111 or PSC 112 **CC:** SOCS, GSPE **ISP:** LAS

PSC 245 - Populisms in Latin America & Beyond

Course Units: 1.0 Leadership and politics in Latin America are often characterized as populist, but there is widespread disagreement as to what populism is. Claimed by no one, most of the time populism is blamed, disapprovingly, upon leaders and movements connoting demagoguery, manipulative appeals to people's emotions and disregard for formal institutions and rules. Interestingly, a similar characterization of populism has recently entered politics in countries such as France or the U.S. With a main focus on Latin America, extending the discussion outside the region, this course scrutinizes three different "populist moments," from the first half of the 20th century to the present. Major figures such as Peron or Vargas; neoliberal reformers from the 1990s, from Fujimori to Menem, and recent Latin American leaders, from Chávez, to Fernandez de Kirchner, plus a few salient cases from outside the region (e.g. Trump, Le Pen) will be examined in the class. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** LAS

PSC 246 - Asian Development: Industrialization Beyond the West

Course Units: 1.0 How did some Asian countries become the first non-Western countries to achieve high-income status, near elimination of poverty, a highly educated and healthy population, leading edge technology and in some cases robust democracies and even admirably equal distributions of wealth? And how did they come to compete with the West, often on terms set by Western countries, despite the West's much earlier industrialization, and the vast geographic and cultural distances? Are answers to be found in politics and institutions? Culture? Resources and demography? Historical effects of imperialism? Regionalism? After a brief comparison of pre-modern China and Europe, the course focuses on the 'miracle' of Japanese industrialization from the late 19th to early 20th century, as well as Japan's combination of industrialization and militarization on the road to World War Two. This is followed by post-World War Two Japan and the four Asian Tigers (South Korea, Taiwan, Hong Kong and Singapore), before focusing on the return of China since the 1980s, and Southeast Asia within the Asian region. This is a reading intensive course,

though no background in Asia, political science or economics is required **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AIS, AMS

PSC 247 - Human (In) Security in a Comparative Perspective

Course Units: 1.0 With a focus on "the daily lives of ordinary people", the recent tradition of Human Security redefines safety as "freedom from fear and freedom from want." At the interface of security, development, and Human Rights grounding democratization, Human Security adopts the perspective of the common citizen, calling for collaboration between states and international and grassroots organizations to prevent and eliminate obstacles undermining people's autonomy, rights, and development. This course aims, first, to provide students with a solid conceptual and applied knowledge of Human Security. Second, by learning about the deep-seated conditions that hinder people's safety from fear and from want, students will gain a thicker perspective on the structural challenges for peace and democracy around the world through the eyes of the people on the ground. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, GSPE **ISP:** GSW, LAS

PSC 248 - The Politics of the New Europe

Course Units: 1.0 A survey of contemporary European politics including topics such as the emerging European Union, the rise of right-wing movements, growing regional and sectional conflict, patterns of immigration, and debate about the very meaning of "Europe." **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** REE

PSC 249 - Middle East Politics

Course Units: 1.0 This course is designed to introduce students to the essential political history and dynamics of the Middle East in the 20th century. Students will study the processes through which the states of the contemporary Middle East emerged; the types of political regimes that have evolved in these states; the origins and evolution of the Arab-Israeli conflict; the relationships between Islam and politics; and debates regarding U.S. foreign policy toward the region. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS

PSC 340 - Politics and Film

Course Units: 1.0 This course explores political themes through the rigorous viewing of feature films and documentaries from the United States and abroad. Films present differing perspectives on the subject. Themes include war, revolution, counter-revolution, role of the individual in social conflict, and US intervention in foreign lands. Class requires critical analysis of the films, supplementary readings, and six conceptual-analytical papers. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, FLM

PSC 341 - Genocide

Course Units: 1.0 Genocide is humanity's greatest and most enduring scourge. After the horrific Holocaust, the world's leaders cried out, "Never Again." Sadly, genocide has occurred, again and again, wherein mass murders, ethnic cleansing, mass rape and pillaging, has taken place in countless places and times since World War II. This course examines examples, causes and motives, position of the perpetrators, victims and bystanders. We shall also look at proposals for avoiding or preventing genocide, perhaps through some form of international humanitarian intervention, or "responsibility to protect." **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS

PSC 342 - Challenges to Democracy in Latin America

Course Units: 1

Democracies in Latin America confront a number of challenges, obstacles, and dilemmas that frequently put their continuity at risk. With the format of a research seminar, this course will explore five thematic clusters. Social indicators on rights and inequality, political identities and citizenship, political and legal institutions, life and economic growth after Neoliberalism, and public safety, crime, and state violence. A preoccupation with some of the most urgent challenges faced by democratization in the region will also lead us to assess actual and potential alternatives.
Prerequisite(s): PSC 111 or PSC 112 or sophomore standing **CC:** LCC

PSC 343 - Women and Politics in the Muslim World

Course Units: 1.0 In this course we will study how politics and women intersect across the Muslim world, including the Middle East, Sub-Saharan Africa, Central Asia, and South Asia. Empirically, we will investigate the varied paths women's rights have taken in different national settings while examining similarities and differences in the degree to which women wield social, economic, and political power in their respective countries. We will seek theoretical explanation for women's status in the region, which varies significantly from country to country. Sample topics for discussion include the Koran and women, debates about the veil, honor killings, the impacts of oil, war, and foreign intervention on women's status, and Muslim female prime ministers and presidents. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** GSWS, REL

PSC 346 - Technologies in Society: Power, Politics and Economy across Industrial Revolutions

Course Units: 1.0 With the advent of the internet, robotics, Big Data, artificial intelligence and machine learning, we are already well into a Third (some say 'Fourth') Industrial Revolution. If history is any guide, this industrial revolution is transforming society, politics and culture in ways both overt and subtle. Further, as it diffuses, it will not be replicated identically across time and space. This course compares the first, second and third industrial revolutions - selectively focusing on the advent of factories/machines, mass production and information technologies, respectively. For each revolution, the course asks three questions 1) how value is created, 2) who controls and benefits from the new modes of production and consumption, and 3) how it transforms and is transformed by its social and political contexts. Second, it explores variation across different national political economies, most prominently in the advanced countries of England, the US, Europe and Japan, with selective comparisons to other developing countries, including China today. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, GCHF, GSPE **ISP:** STS

PSC 347 - Comparative Left Politics

Course Units: 1.0 A critical exploration of Marxian ideas and a comparative examination of how those ideas were, and are, translated into political practice. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** REE

PSC 349 - Seminar: Comparative Politics

Course Units: 1.0 Selected topics in comparative politics. Content will vary from year to year. Preference to junior and sophomore political science majors. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, WAC **ISP:** STS

Political Science - International Politics

200-level courses in international relations cover foreign policy-oriented courses (China and the USA), regional interstate topics (Asia and the Middle East), and practicum-based courses (Model UN). These courses are framed at a conceptual level accessible to students from across the college.

300-level courses in international relations cover advanced issues in international political economy, institutions of global governance, US security, and transnational actors and trends. The course materials are more conceptually and theoretically complex, and involve a more sophisticated set of intellectual problems.

PSC 251 - American Foreign Policy

Course Units: 1.0 This course will provide an overview of the history of US Foreign Policy from the Cold War to the post-Cold War era. The course focuses on major policy options, issues in the Middle East, reset to Asia, and the choices between multilateralism and hegemonic dominance. The course emphasizes policy-making, especially the role of the President and Executive, in struggles with Congress, and the role of various NGO's, think tanks, and other lobbyists in the formation of foreign policy outcomes. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 252 - Global Value Chains

Course Units: 1.0 This course examines the intertwining of power, politics and markets that undergird the production and consumption of everyday consumer goods, from coffee to cars to iPhones. It examines the primary countries where these goods are produced, their differing labor regimes, the international agreements regulating them, the transnational corporations which coordinate the chain of production and consumption, how goods are globally traded and the relative winners and losers these linkages create, usually between developing and developed countries. Each product also corresponds with an underlying theoretical topic, such as natural resources and the global commons or heavy industrialization and industrial policy. The course will introduce some basic conceptual building blocks which will help us organize the extraordinary variety of places, production processes, policies and populations engaged in global value chains. But, we will spend most of the course examining one commodity or product at a time, using what we learn along the way to build an increasingly sophisticated understanding of global production and exchange. Finally, for a final project, students will conduct research on their own product of choice and explore a theoretically important concept associated with it. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** LCC, SOCS, GSPE **ISP:** REE

PSC 253 - International Relations of East Asia

Course Units: 1.0 This course surveys the main currents of international politics in East Asia since World War Two, with an emphasis on events since the end of the cold war. It considers the sequential rise of the economies of Japan, the four East Asian tigers, and finally Southeast Asia and China, and how regional integration across East Asian countries differs from other regions in the world. Furthermore, it examines the foreign policies of the main players in this area, including the important role of the United States, and it explores the evolution of international institutions and norms pertinent to East Asia. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** LCC, SOCS **ISP:** AIS

PSC 254 - Politics of the Arab-Israeli Conflict

Course Units: 1.0 In this class students will develop an understanding of the origins, development, and essence of the Arab-Israeli conflict as well as the challenges involved in resolving the conflict. The conflict will be examined in its historical, political, and human dimensions. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS

PSC 255 - Human Rights, International Law, and Humanitarianism

Course Units: The course critically engagesS with the human rights issues that plague liberal democracies. Given how central human rights are to the identity of the global north, it is particularly disconcerting to observe increasing number of human rights abuses in countries such as the United States, UK, Australia, and the members of EU.? What can

account for this unsettling fact? Can the unprecedented developments
in human rights law and international rights regime be sustained in the face of serious charges of double standards? What is the role and effectiveness of institutions such as ICC and ICJ?

PSC 257 - International Political Economy

Course Units: 1 This course introduces students to the study of international political economy (IPE). It addresses the reciprocal, interactive relationship between politics and economics in the international system. Increasingly integrated global markets present growing challenges and opportunities for political actors around the world. We will explore the effects of political factors on international economic relations as well as the impact of economic factors on domestic and international politics across a variety of issue areas in IPE. **CC:** SOCS, GCHF, GSPE

PSC 258 - Strategies of WWII

Course Units: 1.0 This course will examine the interplay between military and political strategies that shaped the course of World War II, with special attention to the European Theater. It is designed to illustrate the nature of strategic thinking, its relationship to tactical thinking, and its real-world constraints. Special attention will be given to the British decision to continue fighting after the French surrender, the Battle of Britain, Hitler's decision to invade Russia, the allied decision to invade North Africa, and the planning for Normandy. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS, WAC **ISP:** REE

PSC 342R - Challenges to Democratization in Latin America

Course Units: 1.0 **(Not Offered this Academic Year)** Democracies in Latin America confront a number of challenges, obstacles, and dilemmas that frequently put their continuity at risk. This course explores five thematic clusters. Social indicators on rights and inequality, political identities and citizenship, political and legal institutions, life and economic growth, and public safety, crime, and state violence. A preoccupation with some of the most urgent challenges faced by democracy in the region will also lead us to assess actual and potential alternatives. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS **ISP:** LAS

PSC 350 - Theories of International Politics

Course Units: 1.0 In-depth investigation and evaluation of the major perspectives on world politics. Mainstream theories will be compared and contrasted to critical/alternative paradigms. Special attention is given to modes of theory evaluation. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** REE

PSC 351 - Global Organized Crime

Course Units: 1.0 This course will focus on the emergence of new transnational criminal networks in the age of globalization, and the sources and patterns of political corruption in a comparative perspective. Specific issues to be explored include: trafficking zones, weak states, economic underdevelopment, the western consumer demand for illegal commodities, international anti-corruption discourse, US drug policy, comparative analysis of mafia organizations, and how private money corrupts democracies. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** REE

PSC 352 - International Organizations

Course Units: 1.0 This course analyzes the development of contemporary international organizations in all forms, examines the activities of various regional organizations and non-governmental organizations (NGO's), as well as multinational organizations. Focusing on major principles, organizational characteristics, functions, and activities of the United Nations and the UN system, the course assesses the rapid changes, problems, and opportunities that have

developed since the end of the Cold War. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS

PSC 353 - Terrorism and Torture

Course Units: 1.0 This course considers the definition(s) and history of terrorism, as well as its causes and manifestations in the contemporary era. Next, strategies for combating terrorism will be explored - with a major focus on the so-called "war on terror" the U.S. has been engaged in since 2001. A particularly controversial aspect of U.S. actions in the past decade has been the use of torture against detainees at Guantanamo Bay, Abu Ghraib, and other locations. The course will therefore consider a broad-ranging literature on torture - from its history, to the conditions under which it is used in the contemporary era, to questions regarding whether or not torture is effective (and for what purpose). **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS

PSC 354 - Human Rights and Immigration

Course Units: 1.0 This course explores the tense relation between immigration, nation-states, and human rights. What are the rights of documented/undocumented immigrants? What kind of human rights abuses are these people subjected to? What renders non-citizens so vulnerable to various forms of violence, discrimination, and mistreatment? To what extent can these problems be addressed and remedied by appeals to human rights? In what ways does the contemporary condition of non-citizens reveal the limits, paradoxes, and promises of human rights? In this upper level political science course, we will address these challenging, intriguing, and somewhat disconcerting questions through an interdisciplinary inquiry. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS, WAC

PSC 355 - Defense Policy

Course Units: 1.0 A deeper understanding of US Defense Policy in relation to current trends in the international threat environment. Examines the historical roots of US defense policy with a focus on the impact of isolationism, exceptionalism, and the Cold War on those policies. The policy-making process itself will be examined highlighting the influence of the realist paradigm, as well as the various organizational inputs, which help to shape the policy outcomes. A look at the post-Cold War period with emphasis on the impact of 9/11 and the proliferation of weapons of mass destruction on changes in US policy. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 357 - Global Environmental Politics

Course Units: 1 This is a course on global environmental governance. Environmental regulation has expanded from a domestic phenomenon to one that has both global participants and global impacts. Much effort has been invested in formulating international environmental policies. However, these efforts have been rife with complications and disagreements, as many environmental indicators show worsening ecological conditions at unprecedented levels. The scientific uncertainty that shrouds many environmental questions is compounded by the fact that environmental issues often lie at the conjunction of contentious political concerns such as economic development, international trade, ecological justice, and global influence. This course provides an overview of the key concepts, actors, concerns, and issues related to global environmental policy and negotiations. The goal is to understand the larger picture of intertwining relationships between natural, political, economic, and social systems that shape environmental policy. **ISP:** ENS

PSC 358 - Wealth and Power Among Nations

Course Units: 1.0 An examination of the tensions between developed and developing countries in the global political economy. First, the course traces the genealogy of thinkers on the issues of development, such as Smith, Marx, Keynes, modernization theory and development economics, as a way to understand the enduring debates within the field.

Second, it examines historical transformations in the international economy, such as in trade, global finance and economic crises, in order to understand how the structures and opportunities for developing countries have transformed over time. Finally, although there is no focus on any single region of the world, the course touches upon the oil boom in the Middle East in the 1970s, the debt crises in Latin America and Africa in the 1980s, the rise of Japan and the East Asia tigers, the fall of the Soviet Union and Eastern bloc countries in the 1990s, the new giants of China and India, new forms of post-Fordist production, and the relationship between production and identity. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** LAS, REE

PSC 359 - Seminar: International Politics

Course Units: 1.0 Selected topics in international politics. Content will vary from year to year. Preference to sophomore and junior political science majors. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS, WAC **ISP:** REE

PSC 397 - North-South Relations

Course Units: 1 This course examines the fundamental issues that arise out of the relations between the industrialized countries of the global "North" (e.g., the U.S., Europe, Japan) and the developing countries of the global "South," with an emphasis on the period from the mid-twentieth century to today. Our main focus is on the development of the South, and the ways in which its relationship with the North has affected its development trajectories and outcomes. **Prerequisite(s):** PSC 111 , PSC 112 or Sophomore standing **CC:** SOCS, GCHF, GSPE

Political Science - Political Theory

200-level courses survey a wide range of texts and themes, and may focus on a specific historical period or a specific theoretical approach. These courses can be taken by students at all levels.

300-level courses are geared towards students who have likely taken PSC 113 or a 200-level course in theory, and have basic familiarity with the history of Western political thought. Some familiarity with close reading and textual interpretation is expected, although these are practices and skills that students will also further develop in 300-level courses.

PSC 230 - Ancient Political Thought

Course Units: 1.0 Examines the ideas of major political thinkers in ancient philosophy. Potential themes include the tension between philosophy and politics, the nature of democracy, the relationship between war and political life, debates concerning how to live a "good life," the political significance of poetry and art, and the body/mind duality. Thinkers and texts that may be covered include Homer, Thucydides, Plato, Aristotle, the Greek poets, Saint Augustine, Thomas Aquinas, and the Bible. **CC:** SOCS

PSC 231 - Theories of Peace and War

Course Units: 1.0 Do aggression and violence arise from individuals or groups, from nations, global forces, or from entire civilizations? Is warfare an eliminable pathology or just part of the human condition? Any answer to these questions ultimately involves ontological claims on how things are, key in shaping the ways in which we imagine and inhabit our world. This course revisits arguments on peace, war, and violence central in the tradition of Western political thought. By exploring works of classical, modern, and contemporary political thinkers, contextualized in reference to key cases, we will identify and critically assess contentious explanations and philosophical justifications.

PSC 232 - Violence and Politics

Course Units: 1.0 What is the relationship between violence and politics? Is politics a continuation of violent struggle through other means? Or is there a fundamental difference between the two? What is the relationship between legal order and violence? What is the role of violence in resisting different forms oppression? Can the use of violence ever be morally justifiable? If so, when and why? This political theory course aims to inquire into these challenging questions by studying the theoretical debates on the relationship between violence and politics with a special emphasis on questions related to the relationship between legal order, constitution of the state, and the use of violence both in support of, and in opposition to, the existing order. During the course of the term, we will focus on debates surrounding difference forms of violence in embedded in our legal systems, look at examples of resistance movements, assess different arguments made in defense of nonviolent and violent methods of resistance, analyze different conceptions of civil disobedience, and grapple with the question of how representations of violence affect our judgments about its legitimacy and/or justification. **CC:** SOCS **ISP:** LAW

PSC 234 - Women Political Theorists

Course Units: 1.0 Where are all the women in the history of political thought? Some thinkers we explore throughout history include Mary Astell, Mary Wollstonecraft, Harriet Taylor Mill, and Emma Goldman. Their work will prepare us to discuss the political and social thought of three prominent women thinkers of the 20th century: Simone de Beauvoir, Iris Murdoch, and Hannah Arendt. We investigate questions concerning freedom and contingency, responsibility, the nature of self in relation to others, and the limits and scope of ethical action in the work of these theorists. Women political theorists often write novels, short stories, and autobiography/biography (rather than philosophical texts) to explore political and philosophical themes. Consequently, we will be reading novels and autobiography along with political philosophy to think about the relationship between philosophy, politics, and literature. We will also be interested in considering how living their lives as women might have influenced the way these philosophers viewed major political and intellectual issues of the day. **CC:** SOCS **ISP:** GSWS

PSC 235 - African American Political Thought

Course Units: 1.0 This course will introduce students to the critical and constructive dimensions of African American political thought. We will assess the claims that Black Americans have made on the polity, how they define themselves, and how they have sought to redefine the basic terms of American public life. **CC:** SOCS, WAC **ISP:** AFR, AMS, GSWS

PSC 236 - Police, Security and Biopower

Course Units: 1.0 While the development of a political community presupposes a certain level of security, the second half of the 20th century shows how unfortunately frequent it has become for people to turn into victims of the devices they set to secure themselves. How can the tensions between the political and security be addressed to enhance, not to destroy, the freedom and creativity that characterize a political community? Organized as a seminar, and heavy in contemporary political theory, this course will explore both practical and theoretical relations between political communities and the pre-political preconditions for their preservation. **CC:** LCC, SOCS **ISP:** LAS

PSC 237 - Music and Politics

Course Units: 1.0 This class explores the multiple relationships between music and politics with a specific focus on the following dimensions: (1) the use of music as a lens to perceive the world, to frame injustices, to inform political discourse, to raise consciousness, and to mobilize public opinion; (2) the political context in which critically significant music is produced; (3) biographical details of artists that bring understanding to the art they produce; (4) the impact of class, race, ethnicity, and gender on music; (5) the interpretation of political messages found in music; and (6) the intentional and unintentional political consequences of popular music. **CC:** SOCS **ISP:** AMS, LAS

PSC 239 - American Political Thought Through the Progressive Era

Course Units: 1.0 Political thought in America from the colonial period until World War I with an emphasis on evolving political, social, cultural, and intellectual perspectives on enlightenment values, nationalism, slavery, the rise of the industrial economy, the political machine, and America's changing role in the world. **CC:** SOCS **ISP:** AMS

PSC 330 - Enlightenment and Its Discontents

Course Units: 1.0 Is there a politics to the "age of reason?" This course focuses on enlightenment thought and its critics, in the modern as well as the contemporary era. We will inquire about the role of reason in setting the terms of citizenship, including how the citizen should behave. Is reason a male attribute? Does passion and/or religion play a role in reasonable thinking? The historical span of this course will generally cover the 17th to the 19th centuries and show how we have come to think about politics the way we do today. **CC:** SOCS

PSC 333 - Twenty-First Century American Political Thought

Course Units: 1.0 An exploration of political thinking in regard to the multiple crises the United States faces in the 21st century. Potential topics include threats to democracy in the United States by right wing groups and White Supremacy; specific challenges of structural racism, gender inequity, police violence, guns; social movements such as Black Lives Matter, #metoo, the Sunrise Movement; and the historical meanings of individualism, diversity, freedom, imperialism, and Western expansion in the US. **CC:** SOCS **ISP:** AFR, AMS, GSW

PSC 334 - Contemporary Continental Theory

Course Units: 1.0 In the latter half of the twentieth century, theorists working in the continental tradition have developed new approaches to modern political concerns about the power of the state, the possibility of democracy, the importance of language, media and rhetoric, and the connections between knowledge, ethics, religion and politics. Students in this course will grapple with some of the most important figures and theories at the leading edge of this tradition. While this course presumes no background in continental theory, students must be prepared to wrestle with difficult texts, ideas and thinkers. Authors may include: Agamben, Badiou, Butler, Cavarero, Cavell, Deleuze, Derrida, Fanon, Foucault, Ranciere, Zizek. **CC:** SOCS, WAC, WAC-R **ISP:** REE

PSC 336 - Political Wisdom

Course Units: 1 Political life involves making decisions that may define the fate of entire communities. How do we best prepare to judge, decide, and act wisely? In the Crito, Socrates offers a defense of the laws in arguing against escaping his death sentence. Yet, segregation, slavery, Apartheid, the Holocaust, were all carried out through legal means. This class assesses the possibilities of phronēsis, or prudence, which Aristotle describes as the virtue of producing "right judgments about what is to be done" in concrete, unique, and unrepeatable circumstances to tackle wicked problems. **CC:** GCHF, GSPE, WAC

PSC 339 - Seminar: Political Theory

Course Units: 1.0 Selected topics in political theory. Content will vary from year to year. Preference to sophomore and junior political science majors. **CC:** SOCS, WAC **ISP:** AFR, GSWS

PSC 388 - Politics of Protest

Course Units: 1 Are political protests dangerous or central to democratic politics? Can spontaneous protests ever create long lasting change? Or are they bound to dissipate? What are the acts of protest that are justifiable? Under what conditions? To address these questions, the course will cover a wide range of readings from foundational texts written by Martin Luther King, Mohandas Gandhi, Henri David Thoreau, John Rawls, Hannah Arendt, and Jürgen Habermas

to contemporary theorists' interventions into conceptual debates regarding different forms of protest and their democratic value.

PSC 388R - Politics of Protest

Course Units: 1 Are political protests dangerous or central to democratic politics? Can spontaneous protests ever create long lasting change? Or are they bound to dissipate? What are the acts of protest that are justifiable? Under what conditions? To address these questions, the course will cover a wide range of readings from foundational texts written by Martin Luther King, Mohandas Gandhi, Henri David Thoreau, John Rawls, Hannah Arendt, and Jürgen Habermas to contemporary theorists' interventions into conceptual debates regarding different forms of protest and their democratic value.

PSC 434 - Feminist Film

Course Units: 1.0 Using 10 films as our "texts" we will examine the role of women in society, the diversity of women's lives, the impact of gender roles in various cultural contexts, the possibility of alternative sexualities and ways of living, and whether we can say what constitutes a "feminist film." The course is focused on discussion of, and writing about, the films but includes analysis of feminist political theory and feminist film theory to provide tools for better interpretation. **CC:** SOCS **ISP:** AMS, FLM, GSWS

Political Science - United States Politics

200-level courses in United States politics generally focus on institutions of government, political behavior, or public policymaking. These courses are framed at a conceptual level accessible to students from across the college.

300-level United States politics courses focus on a special topic (such as film, political psychology, and constitutional law) and/or contain a strong methodological component. The course materials are more conceptually and theoretically complex, and involve a more sophisticated set of intellectual problems.

PSC 160 - Presidential Elections

Course Units: 1.0 This course will be offered every four years, in the fall term of U.S. presidential election years. The course will consist of an in-depth examination of the presidential election. Candidates, developments, and events of that year will be analyzed, as well as placed within their broader historical and conceptual contexts. **CC:** SOCS **ISP:** AMS

PSC 176 - Mathematics and Democracy

Course Units: 1 In this course, we will assess democracy through multiple perspectives, most centrally through mathematics. In particular, we will ask ourselves essential questions such as: How can we measure and quantify democracy? How can quantitative methods enable us to analyze the concepts of fairness and bias, and also, what are their limitations? How can (and should) math play a vital role in upholding the essential democratic tenets of access, participation, and human rights? Throughout the course, we will use mathematical notation and terminology to represent real-world issues. **CC:** QMR, JDQR

PSC 260 - Policy Making and American Society

Course Units: 1.0 The process through which public policies are originated, shaped, adopted, and applied at all levels of government in the U.S. and the impact of public policies on American society. Policies such as crime, immigration, gay rights, abortion, the environment, smoking, and others are used as case studies to examine the policy process. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS

PSC 261 - Public Opinion

Course Units: 1.0 An overview of public opinion in the United States. Topics include the content of citizens' opinions toward a wide range of political topics, the sources of people's opinions, and an evaluation of whether the opinions of the public matter (for policy, for governance, and for democracy). The course material is structured around important normative questions, such as: What is the role of citizens in a democratic society? Are citizens pliable? Do citizens organize their political thinking? Do citizens demonstrate and endorse democratic basics? **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 263 - US Environmental Policy

Course Units: 1 This course examines the emergence, development, and future directions of environmental policy within the United States. It covers early environmental policy achievements such as the Clean Air Act, the reasons for federal inaction on environmental policy since the 1990s, and new directions for policy action in the 21st century as society understands. **ISP:** ENS, STS

PSC 264 - Climate Communication

Course Units: 1

PSC 266 - Women and Politics

Course Units: 1.0 The political, social, and economic circumstances of women in the U.S. Topics include history of women's rights, the gendering of politics, women as political actors (voters, candidates, and government officials), and politically relevant differences across gender identities. Issues include gender equality (in the workplace, education and athletics), reproductive rights, and violence against women, among others. Special attention to the intersection of gender with other identities. **Prerequisite(s):** PSC 111 or SOC 100 or sophomore standing **CC:** JSPE **ISP:** AMS, GSWS

PSC 268 - Electoral Politics

Course Units: 1.0 Examination of elections in the U.S., including presidential, congressional, and state elections. Specific topics include the democratic theory of elections, candidate strategy, voter decision making, identity politics, campaign finance, and the electoral roles of the media, political parties, and campaign consultants. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 269 - Media and Politics

Course Units: 1.0 Major trends in U.S. media, politics, and political communication. The focus is on media coverage of politics as well as effects of media on the public, across various types of media sources. These will include the traditional news media, partisan media sources, and social media. The larger context is the role of media in a democratic society. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, WAC **ISP:** AMS

PSC 270 - CIA and the Art of Intelligence

Course Units: 1.0 Provides an historical background to intelligence and espionage, and offers perspectives on present day secret intelligence operations of world powers in support of their national security objectives. Discussions on intelligence analysis, evaluation, human and technical intelligence, cryptography, counter-intelligence, moles, various kinds of overt operations, US foreign policy issues and goals. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, REE

PSC 272 - The Environment, Energy, and US Politics

Course Units: 1.0 Examination of how politics and policymaking affect the air we breathe, the water we drink, and the land we live on. This course will explore key U.S. environmental issues and their scientific underpinnings as well as the connections between these issues and our collective use of natural resources. The course will review major pieces of federal environmental law in the United States and address the policy considerations, justifications, and regulatory frameworks underlying them, as well as the effectiveness of these laws in achieving a healthier environment. The course will also examine the respective roles of Congress, the executive agencies, and the courts in determining environmental policy. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, STS

PSC 273 - The Supreme Court and Judicial Politics

Course Units: 1.0 An investigation of the judicial branch of government in the U.S. that focuses on the role of judges, the functioning of courts, and leading contemporary controversies in the judicial system. Among the primary concerns of this course are: the structure of the American Judiciary, judicial selection processes, how cases originate and move through the judicial system, how judges think about and reach decisions in the cases, and the role law plays in society. In exploring these topics many actual Supreme Court cases are dissected, focusing on such issues as: gay rights, pornography, rights of disabled citizens, the rights of those accused of crimes, and free speech over the Internet, to name only a few areas. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, LAW

PSC 277 - Capital Region Political Internships

Course Units: 1.0 This class enables students to become politically active and/or gain political experience by working for elected officials, government agencies, election campaigns, interest groups, non-profit organizations, lobby firms, etc. Students draw on their internship experience and related academic work to reach a better understanding of the complexities and dynamics of politics at the state or local level. Students are permitted to enroll in this course twice, although the course will count toward the Political Science major only once. **Prerequisite(s):** Sophomore standing and permission of the instructor. **CC:** SOCS **ISP:** AMS, ENS **Note:** This course does not count towards the PSC portion of an ID major.

PSC 280T - Washington, D.C. Internship Program

Course Units: 1.0 A 10-week spring term in Washington, D.C. wherein each student is an intern either on the Hill, with a Nongovernmental agency (NGO), or with some other political, social, cultural, or scientific organization in D.C.. The internship receives one course credit. The second course is a seminar focused on a specific political theme (examples from past years include national security and foreign policy) introducing students to the policy, partisan and ideological debates within Washington. The third course is Washington, D.C.: Cultural and Political Spaces in America's Capital (AMS 251T). **Prerequisite(s):** Sophomore standing and permission of the instructor. These courses may not be taken as pass/fail. **ISP:** AMS **Note:** The internship does not count towards the PSC portion of an ID major.

PSC 282 - Health Politics and Policy

Course Units: 1.0 This course will examine the subject of health care policy in the American political system. Students will learn about the roles and functions of key actors, institutions, concepts, and principles as part of a broad overview of American health politics. From this foundation, we will develop a theoretical and practical framework to ground our analysis of current health policy issues and debates. Topics will include finance, insurance, Medicare/Medicaid, the Patient Protection and Affordable Care Act (aka "Obamacare"), prescription drug regulation, private markets, the public interest, ethics, and the role of government. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, WAC **ISP:** AMS, STS

PSC 283 - Social Movements, the Environment and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** SOC 270 **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **ISP:** AMS, ENS, STS

PSC 284 - Political Sociology

Course Units: 1.0 Issues of political power, domination, and legitimacy from a sociological perspective. Topics include the creation and maintenance of political power, the role of legitimacy and the impact of political socialization. **Cross-Listed:** SOC 240 **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AFR, AMS, GSWS

PSC 286 - The Modern Presidency

Course Units: 1.0 Case studies in Presidential leadership and administrative styles, including those of FDR, Eisenhower, Kennedy, Johnson, Reagan, Clinton, Obama, and Trump. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 287 - The Contemporary Presidency

Course Units: 1.0 The rapidly-changing Trump-era presidency in contemporary and historical context: recent developments in the institutional and narrative-based presidency, with a background examination of the administrations from Reagan through Trump. **CC:** SOCS **ISP:** AMS

PSC 289T - New Hampshire Primary Mini-Term

Course Units: 1.0 One of the most important events in every presidential election cycle is the New Hampshire primary. In this mini-term, students will analyze the New Hampshire primary through formal coursework (readings, discussions, papers, etc.). They will also experience the primary by spending three weeks in New Hampshire in late November-early December, shortly before balloting occurs early in the following year (a presidential election year). While in New Hampshire, students will volunteer with a candidate campaign organization, media outlet, or other campaign-related group. In addition, students will attend campaign events and guest lectures (by state officials, campaign staff members, journalists, scholars, etc.). This course is offered every four years consistent with the presidential election cycle. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **ISP:** AMS

PSC 302 - U.S. Energy Policy

Course Units: 1

Considers the protections afforded to individual rights and liberties by the U.S. Constitution and the Bill of Rights. Topics include freedom of speech and assembly, the right to privacy, religious freedom, equal protection and discrimination, and the due process rights of those accused of crimes. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **Cross-Listed:** ENS 302 **Prerequisite(s):** PSC 111 or PSC 112
CC: SOCS, JCHF, JSPE **ISP:** AMS, ENS, STS

PSC 361 - Political Psychology

Course Units: 1.0 The application of psychological theories to understanding the political attitudes and behavior of individuals (citizens, political leaders) as well as groups. Specific topics include stereotypes, personality, social cognition, attitude formation, social identity theory altruism, emotion, and elite decision-making. **Prerequisite(s):** PSC 111 or PSC 112 or PSY 100 **CC:** SOCS, WAC

PSC 364 - Law and Film

Course Units: 1.0 This course uses the medium of film as a springboard to introduce and explore concepts in legal theory, American legal culture, and the exercise of public and private power through the legal system. Specific topics of discussion include law as morality, higher versus positive law, law and gender, and the heroic lawyer mythology. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, WAC **ISP:** AMS, FLM, LAW

PSC 365 - Law, Society, and the Wire

Course Units: 1.0 HBO's The Wire is often hailed as one of the greatest television series. During its run, critics compared it to a novel or epic poem. Along with its gritty portrayal of inner city decay and the lives lived in this environment, the crime drama convincingly portrays communities and their institutions. The Wire's depiction of law is among its most nuanced and provocative features. The show easily slips among the black letter law, the law on the street, and informal law-like systems that exist among communities that do not fully subscribe to the norms of the state. This course will use the portrayal of law in The Wire to address some of the following questions: What is law? Is law only the domain of the state? What is the relationship between law and power? Is violence inherent in law? Is law inherently oppressive? If so, how do we reconcile oppression with democratic practice and human rights? **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 369 - Seminar: US Politics

Course Units: 1.0 Selected topics in U.S. politics. Content will vary from year to year. Preference to sophomore and junior political science majors. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 370 - Constitutional Law

Course Units: 1.0 An examination of the Constitutional tradition in the United States, focusing upon the structure and powers of the federal government. Topics and themes include the power of the courts to interpret the laws and the Constitution, the power of the federal government and the significance of "states' rights," federal government intervention in matters of "commerce" or economics, and the nature and expansion of executive power, especially in the area of national security. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **CC:** SOCS **ISP:** AMS, LAW

PSC 371 - Civil Rights and Civil Liberties

Course Units: 1.0 Considers the protections afforded to individual rights and liberties by the U.S. Constitution and the Bill of Rights. Topics include freedom of speech and assembly, the right to privacy, religious freedom, equal protection and discrimination, and the due process rights of those accused of crimes. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, JCHF, JSPE **ISP:** AMS, LAW

PSC 374 - Pop Culture & Rock Music in the 1970s

Course Units: 1 The 1970s was a remarkable decade of transition and turbulence. Stagflation, the oil crisis, the fall of Saigon, de?tente, Watergate, Three Mile Island, the women's movement, left-wing terrorism, urban decay, the rising gay movement, and the looming dread of ecological disaster were just a few of the trendlines. The writer Tom Wolfe

dubbed the 70's the "Me decade," by which he meant the transition away from 1960s communitarianism and New Deal-style politics and towards an individualist ethos of hedonism, self-realization, and personal freedom. Rock music, which was the dominant musical style, reflected and promoted this culture shift, emphasizing a libertine attitude and downplaying the social consciousness, egalitarianism, and anti-capitalist motifs that prevailed among the youth in the 60s. This course surveys the cultural, economic, and political landscape of the decade through the prism of rock music, which reached a zenith of aesthetic creativity, genre-expansion, and commercial success. **CC:** SOCS

Political Science - Independent Research

PSC 295H - Political Science Honors Independent Project 1

Course Units: 0.0 By application to the individual instructor and subject to confirmation by the Department Chair.

PSC 296H - Political Science Honors Independent Project 2

Course Units: 1.0 By application to the individual instructor and subject to confirmation by the Department Chair.

PSC 490 - Political Science Independent Study 1

Course Units: 1.0 By application to the individual instructor and subject to confirmation by the Department Chair.

PSC 498 - Political Science Senior Thesis 1

Course Units: 0.0 Open to seniors in political science. Subject to department approval, this requirement may be fulfilled by the completion of original political science research, political action, political art, or applied public policy research. The senior project is an intensive two-term research project serving as the capstone experience for the major. All senior projects are subject to an oral examination as a requirement for graduation as a major.

PSC 499 - Political Science Senior Thesis 2

Course Units: 2.0 **(TBD: Staff) CC:** WS

Psychology

PSY 100 - Introduction to Psychology

Course Units: 1.0 This course will welcome students to psychology, the scientific study of mental andbehavioral processes. A wide range of approaches within psychology will be discussed, including neuroscience, cognitive and memory processes, learning, human development, clinical psychology, social psychology, and personality psychology. Along the way, psychological methods and the history of the field will be discussed. Upon completing this course, students will be eligible to enroll in any 200-level course in
the department. **CC:** SOCS

PSY 200 - Statistical Methods in Psychology

Course Units: 1.0 The descriptive and inferential statistical procedures used by researchers to explain and analyze their results. Mean, variance, correlation, hypothesis testing using t-test, ANOVA, and nonparametric tests. **Prerequisite(s):** PSY 100 , PSY 210 / BIO 210 or (BIO 103 and BIO 104) **ISP:** ENS

PSY 210 - Neuroscience: Mind & Behavior

Course Units: 1.0 Basic concepts of brain functioning as they relate to psychological phenomena. Including methodology, neuroanatomy, and neurotransmission, important for understanding the mediation of behavior. **Cross-Listed:** BIO 210 **Prerequisite(s):** PSY 100 or (BIO 103 and BIO 104) **CC:** SET **ISP:** STS

PSY 212 - Neurobiology

Course Units: 1.0 This course focuses on fundamental concepts of neurobiology using studies from invertebrate and/or vertebrate model systems. Topics covered will include neural development, synaptic connectivity, neural plasticity, neuronal cell properties, sensory systems, and control of movement. **Cross-Listed:** BIO 242 **Prerequisite(s):** BIO 103 and BIO 104

PSY 213 - Clinical Neuropsychology

Course Units: 1.0 This course will examine the relationship between brain function and behavior, especially the evaluation and treatment of individuals across the lifespan who have cognitive deficits and brain compromise (e.g., due to injury, neurodevelopmental or degenerative processes, toxic exposure, etc.). The material is interdisciplinary, integrating across various sub-disciplines of medicine (e.g., neurology, psychiatry, radiology) and subfields of psychology (e.g. neuroscience, clinical disorders, assessment, cognitive, health). Clinical cases and research reports will be used to illustrate and characterize neuropsychological phenomena, conditions, and diagnoses. The course objectives will be accomplished through lecture, readings, discussion, guest speakers, and experiential activities (e.g., clinical interview, test administration, field experience, etc.). **Prerequisite(s):** PSY 100 or PSY 210 or BIO 210 or instructor permission

PSY 215 - Health Psychology

Course Units: 1.0 This course will examine psychology's role in the etiology, prevention, progression, and treatment of disease. Topics will include mechanisms by which stress and health-related behaviors such as diet, exercise, smoking and substance abuse contribute to illness, doctor-patient communication, problems of medical compliance, cognitive/behavioral treatment techniques, pain management, and health promotion/ disease prevention strategies. **Prerequisite(s):** PSY 100 **ISP:** STS

PSY 220 - Attention and Memory

Course Units: 1.0 This course will focus on how people take in information about the world around them, store that information, and retrieve it to help them solve problems. In doing so, we will discuss the seemingly paradoxical conclusion that we take in and interpret a great deal of our environment but that we also fail to notice much of it. We will also discuss how we are able to work on and manipulate the information we have taken in, and make decisions based on it, emphasizing the impact that this process has on our ability to perform many cognitive tasks. Additionally, those factors that influence how and how well we encode and later retrieve various types of information will be considered. **Prerequisite(s):** PSY 100 or (BIO 103 and BIO 104)

PSY 225 - The Psychology of Language

Course Units: 1.0 This course will present a broad overview of language and its instantiation within the human brain. We will pay particular attention to 1) the ways that neurological disorders impact language functioning, and 2) how

these patterns of language breakdown inform psychological models of typical language processing. This course will cover basic anatomy as well as a survey of language related topics (e.g., speech perception, deafness, language acquisition, linguistic diversity). **Prerequisite(s):** PSY 100

PSY 230 - Social Psychology

Course Units: 1.0 This course presents an overview of the field of social psychology: We live in a world in which social factors can dramatically impact us. We will thus explore major theories and classic and contemporary research on why people think, feel, and behave the way they do in both individual and group settings. Topics may also include evolutionary and cultural perspectives, research methods and ethics in the field, and applications of social psychology to areas such as health, law, education, and public policy. **Cross-Listed:** SOC 203 **Prerequisite(s):** PSY 100 is required per the PSY Department. SOC 100 does not serve as a prerequisite.

PSY 236 - Psychology of Conspiracy Theories

Course Units: 1 This course will explore the psychology of conspiracy theories. We will start the term by establishing the definitions of key course concepts and discussing how researchers measure the tendency to believe in conspiracy theories. We will then explore the diverse reasons why people believe in conspiracy theories. We will also investigate who believes in conspiracy theories. We will then turn our focus to examining the many detrimental consequences of conspiracist beliefs. We will close the term by discussing strategies for avoiding falling prey to conspiracy theories and other hoaxes. **Prerequisite(s):** PSY 100 **CC:** SOCS

PSY 240 - Developmental Psychology

Course Units: 1.0 This course traces the processes that influence human development across the lifespan, from infancy to old age. What are the cognitive, emotional and social behavioral milestones that occur at each significant stage of development? In what ways do human beings change as they get older, and in what ways do they stay the same? What early experiences can influence later developmental outcomes? The major theoretical perspectives that help illuminate the developmental process, as well as the experimental and quasi-experimental methods of study, will be emphasized. **Prerequisite(s):** PSY 100 **CC:** SOCS, WAC, JCHF, JSPE

PSY 241 - Adolescent Psychology

Course Units: 1 This interdisciplinary course will provide an overview of the physical, cognitive, psychosocial, sexual, gender, and moral development of adolescents, with a particular emphasis on the experience of ethnically, culturally, and economically diverse adolescents. The course emphasizes critical thinking, careful reading, analysis, and class participation. We will discuss implications of course content for teachers, families, service providers, and policy makers. **Prerequisite(s):** PSY 100

PSY 242 - Death and Dying

Course Units: 1.0 This course will examine the social and psychological processes that shape the dying and bereavement process. The historical and cultural factors that influence attitudes toward dying and the ethical issues that impact decisions about how we die will be discussed. In addition, this course will discuss end of life care, including hospice, palliative care and pain management; how our health care system treats the dying; mental health interventions; and suicide. There are no prerequisites for this course. **CC:** JSPE, WAC **ISP:** STS

PSY 245 - Psychology of Gender Roles

Course Units: 1.0 The psychological bases and effects of the masculine and feminine role norms in our culture. Topics include biological bases of sex differences, sexuality, romance, work and family roles, origins of sex-typed personality in family and cultural socialization. **Prerequisite(s):** PSY 100 **ISP:** GSW

PSY 246 - Educational Psychology

Course Units: 1.0 In this course, we will apply the principles of psychology to various aspects of teaching and learning, with an emphasis on the cognitive abilities of students, classroom management procedures, and motivational techniques. **Prerequisite(s):** PSY 100 **CC:** SOCS, JCHF, JSPE **ISP:** STS

PSY 250 - Clinical Psychology 1: Disorders

Course Units: 1.0 An introduction to the diagnosis, study, and treatment of psychological disorders. Emphasis will be placed on the cause (i.e., etiology), expected outcome (i.e., prognosis), and prevalence of the major mental disorders recognized by the American Psychiatric Association in the Diagnostic and Statistical Manual for Mental Disorders. The course covers major categories of psychiatric diagnoses including Anxiety, Mood, Eating, Sexual, Trauma and Stressor-Related, Obsessive-Compulsive, Personality, Somatic, Dissociative, and Psychotic Disorders. **Prerequisite(s):** PSY 100 or PSY 210 or BIO 210 **CC:** GSPE

PSY 251 - Personality

Course Units: 1.0 This course will emphasize personality theory and research in an effort to understand individual persons. Students will come to learn more about their own and others' personality through a variety of approaches, such as traits and individual differences, psychoanalysis, personality development, self psychology, and the humanistic perspective. Drawing connections to other areas of psychological science, the course will explore how personality relates to motivation, emotion, cognition, and behavior. **Prerequisite(s):** PSY 100

PSY 255 - Psychology of Addiction

Course Units: 1.0 A socio-psychological approach to understanding a variety of addictive behaviors. Includes coverage of substance abuse, e.g., alcohol, tobacco, marijuana, illegal drugs, as well as activities such as gambling, sex, exercise, and food/eating. **Prerequisite(s):** PSY 100

PSY 261 - Psychology of Women and Gender

Course Units: 1.0 This course will introduce students to the psychology of gender. We will examine both how psychologists study gender and how psychology itself can be a gendered field. Time will be spent addressing relevant research methods, theories, and applications. During this course, students will learn about the different research methods, clinical techniques, and applications used by psychologists that are relevant to the psychology of gender. In focusing on psychology's role in examining women and gender, students will be exposed to primary source readings in the field and personal accounts. Lastly, students will engage with this material via in-depth class discussions and diverse assignments. **Prerequisite(s):** PSY 100 **CC:** SOCS **ISP:** GSWS

PSY 291 - Psychology Research Practicum 1

Course Units: 0.0 The Psychology Research Practicum experience allows students to become involved in psychological research early in their careers at Union College. Students work under the supervision of a member of the Psychology Department. Duties will be determined individually with the research supervisor, and may include such things as: surveying the literature in an area, designing or testing research materials, interacting with research participants, collecting data, and analyzing data. Expectations include at least four hours per week devoted to the research, as well as attendance at Psychology Speaker Series seminars. This course requires permission of the individual research

supervisor, and is graded on a Pass/Fail basis. In order to receive credit equivalent to one course, the student must earn passing grades in three terms of practicum experience within the psychology department. Research Practicum is normally not open to students who are currently enrolled in independent research experiences in psychology, except by permission of the department chair. The Research Practicum course does not count towards the major requirements in psychology. **Prerequisite(s):** PSY 100 or PSY 100P

PSY 292 - Psychology Research Practicum 2

Course Units: 0.0 The Psychology Research Practicum experience allows students to become involved in psychological research early in their careers at Union College. Students work under the supervision of a member of the Psychology Department. Duties will be determined individually with the research supervisor, and may include such things as: surveying the literature in an area, designing or testing research materials, interacting with research participants, collecting data, and analyzing data. Expectations include at least four hours per week devoted to the research, as well as attendance at Psychology Speaker Series seminars. This course requires permission of the individual research supervisor, and is graded on a Pass/Fail basis. In order to receive credit equivalent to one course, the student must earn passing grades in three terms of practicum experience within the psychology department. Research Practicum is normally not open to students who are currently enrolled in independent research experiences in psychology, except by permission of the department chair. The Research Practicum course does not count towards the major requirements in psychology. **Prerequisite(s):** PSY 291

PSY 293 - Psychology Research Practicum 3

Course Units: 1.0 The Psychology Research Practicum experience allows students to become involved in psychological research early in their careers at Union College. Students work under the supervision of a member of the Psychology Department. Duties will be determined individually with the research supervisor, and may include such things as: surveying the literature in an area, designing or testing research materials, interacting with research participants, collecting data, and analyzing data. Expectations include at least four hours per week devoted to the research, as well as attendance at Psychology Speaker Series seminars. This course requires permission of the individual research supervisor, and is graded on a Pass/Fail basis. In order to receive credit equivalent to one course, the student must earn passing grades in three terms of practicum experience within the psychology department. Research Practicum is normally not open to students who are currently enrolled in independent research experiences in psychology, except by permission of the department chair. The Research Practicum course does not count towards the major requirements in psychology. **Prerequisite(s):** PSY 292

PSY 295H - Psychology Honors Independent Project 1

Course Units: 0.0 **Note:** Total credit is obtained by the completion of PSY 296H.

PSY 296H - Psychology Honors Independent Project 2

Course Units: 1.0 **Prereq/Corequisite(s):** PSY 295H

PSY 300 - Research Methods in Psychology

Course Units: 1.0 Students will learn how to conduct research in psychological science, including hypothesis development, research design, data collection, scientific writing, ethical considerations, and dissemination. Students will also learn how to conduct statistical analyses using the SPSS software package, to include regression as well as analysis of within-participant and factorial designs. In the capstone assignment, students will develop their own hypotheses and design their own psychological experiments with which to test those hypotheses. **Prerequisite(s):** PSY 200 with a grade of C- or better; students who earned a B-plus or better in STA 104 , STA 164 , or ECO 243 are also

eligible to enroll in PSY 300; students who earned a 4 or 5 in Statistics AP are eligible to enroll in PSY 300. **Corequisite(s):** PSY 300L **CC:** WAC, WAC-R **Lecture/Lab Hours** One lab per week.

PSY 310 - Cognitive Neuroscience

Course Units: 1.0 This course will present in depth the present understanding of the brain mechanisms that give rise to many mental processes, including attention, memory, language production, and comprehension, numerical processing, reasoning, emotions, and executive functioning. Weekly laboratory sessions will cover major methodologies used in cognitive neuroscience, including brain imaging and neural network simulation. **Prerequisite(s):** (PSY 210 or BIO 210) and PSY 220 and PSY 300 **Corequisite(s):** PSY 310L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week.

PSY 313 - Sensation and Perception

Course Units: 1.0 The study of sensation and perception examines the physics of the real world (stimulus), how the nervous system captures information about the environment (sensation), and the translation of sensory information into meaningful events (perception). Multiple levels of analysis will be introduced including sensory physiology, psychophysiology, and psychophysics. The class will cover a variety of topics, possibly to include how the eye is not a camera, why people need glasses, how 3-D movies work, the mysteries of face blindness, and what's hiding behind your eardrum. **Prerequisite(s):** (PSY 210 or BIO 210) and PSY 300 **Corequisite(s):** PSY 313L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

PSY 330 - Advanced Personality and Social Psychology

Course Units: 1.0 Covers contemporary theory and research on (a) attitudes and social cognition (e.g., attitude formation and change; impression formation; persuasion; stereotypes and prejudice; emotion; self-regulation), (b) interpersonal relationships and group processes (e.g., romance; intergroup relations; aggression; pro- and anti-social behavior), and (c) personality and individual differences (e.g., trait structure, development, assessment, and outcomes). Weekly lab involves learning and applying topically relevant research methods. **Prerequisite(s):** PSY 300 and (PSY 230 or PSY 251) **Corequisite(s):** PSY 330L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

PSY 331 - Psychology of Emotion

Course Units: 1.0 Examination and evaluation of scientific theories and research about emotions, including the evolution and development of emotions, the physiological and neurological underpinnings of emotions, individual differences and psychopathology, and the role of emotions in close relationships and everyday life. **Prerequisite(s):** PSY 210 or PSY 213 or PSY 220 or PSY 225 or PSY 230 or PSY 240 or PSY 250 or PSY 251

PSY 347 - Psychology of Sexuality

Course Units: 1.0 We will examine the varied forms of human sexuality from a psychological perspective. This analysis will include several theoretical approaches (e.g., comparative, biological, evolutionary, psychoanalytic, queer theory) and a range of topics (e.g., sexual development across the lifespan, choice of gender of partners, the relation of sexuality and gender, power relations in sexuality). **Prerequisite(s):** PSY 100 **ISP:** GSW

PSY 351 - Clinical Psychology 2: Interventions

Course Units: 1.0 Survey of the major contemporary systems of psychotherapy. Includes analytic, family systems, cognitive and behavioral approaches. Students will learn theories, techniques, and processes involved in the practice of psychotherapy. Clinical diagnoses and interventions are revisited from the perspective of communications theory. The lab portion of the course will include opportunities for experiential learning, including: clinical skill development using clinical research methods for coding and analyzing factors salient in dyad and group communication (e.g., non-verbal,

verbal, and other aspects of communication). **Prerequisite(s):** PSY 250 and PSY 300 **Corequisite(s):** PSY 351L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **Note:** This course is designed to be taken in sequence with PSY 451 , but enrollment in PSY 451 is optional and may be taken in a subsequent year, space permitting. Also, note that this course was formerly known as Human Relations 1: Communications.

PSY 352 - Psychological Assessment and Testing

Course Units: 1.0 Learn about one of psychology's most important and unique practical contributions. Review issues related to test construction (e.g., reliability and validity) and practice construction and validation of a new test that incorporates diversity, equity, and inclusion goals. Students will work with SPSS in the lab and will be exposed to a range of commonly used psychological assessments, such as intelligence tests, in lab sessions. **Prerequisite(s):** PSY 300 **CC:** WAC-R, JNPS

PSY 353 - Child and Adolescent Psychopathology

Course Units: 1.0 This course will focus on major forms of atypical development in childhood and adolescence. These include disorders of behavior, disorders of emotion, and developmental and learning problems. You will learn about the defining characteristics, associated features, possible causes, theoretical formulations, research evidence, and current approaches to intervention and prevention for a wide range of child and adolescent disorders. In addition, we will focus on diversity, inclusion, and ethics in this population. We will trace the possible developmental course of each disorder and show how biological, psychological, and socio-cultural factors interact with the child's environment to determine its expression. Case examples will be used to enrich your understanding of the experience of children with psychopathology. **Prerequisite(s):** PSY 100 and PSY 240 or PSY 250 **CC:** SOCS

PSY 360 - Community Psyhology

Course Units: 1 This course provides an overview of community-based participatory research (CBPR), including how to collect, analyze, integrate, and report data from multiple sources. In this writing intensive course, students will use quantitative, qualitative, and mixed methods approaches to develop research questions; work with raw data; and present findings aimed at improving health and wellness for diverse populations. Course content will address the relationship between theory and method, power dynamics in community partnerships, issues of validity and rigor, and ethical concerns in research. **Prerequisite(s):** PSY 100 and PSY 200 **CC:** JSPE, SOCS, WAC-R

PSY 402 - Honors Colloquium 1

Course Units: 0.0 A discussion-based course running the full academic year, open to junior and senior qualified students. Limited enrollments; students will be recommended for the course by faculty. Each year's topics will be determined by presenters in the Psychology Department's speaker series. Around eight speakers with expertise in psychology and neuroscience will be invited to present their research. Students will meet to discuss readings pertaining to upcoming speakers. Note: This course does not fulfill the seminar requirement for the psychology major, but it does satisfy the upper-level elective requirement for the psychology major. **Note:** This course does not fulfill the psychology major requirement of a seminar.

PSY 403 - Honors Colloquium 2

Course Units: 0.0 A discussion-based course running the full academic year, open to junior and senior qualified students. Limited enrollments; students will be recommended for the course by faculty. Each year's topics will be determined by presenters in the Psychology Department's speaker series. Around eight speakers with expertise in psychology and neuroscience will be invited to present their research. Students will meet to discuss readings pertaining to upcoming speakers. Note: This course does not fulfill the seminar requirement for the psychology major, but it does

satisfy the upper-level elective requirement for the psychology major. **Prerequisite(s):** PSY 402 **Note:** This course does not fulfill the psychology major requirement of a seminar.

PSY 404 - Honors Colloquium 3

Course Units: 1.0 A discussion-based course running the full academic year, open to junior and senior qualified students. Limited enrollments; students will be recommended for the course by faculty. Each year's topics will be determined by presenters in the Psychology Department's speaker series. Around eight speakers with expertise in psychology and neuroscience will be invited to present their research. Students will meet to discuss readings pertaining to upcoming speakers. Note: This course does not fulfill the seminar requirement for the psychology major, but it does satisfy the upper-level elective requirement for the psychology major. **Prerequisite(s):** PSY 403 **Note:** This course does not fulfill the psychology major requirement of a seminar.

PSY 406 - Seminar: Psychology of Oppression

Course Units: 1 This course will provide an overview of theoretical perspectives, research methods, empirical findings, and practical applications of psychological research on intersectional oppression. We will examine in-depth issues that are central to the psychological study of oppression, such as the evolution of oppression in psychological research, practice, and society; interpersonal, institutional, and internalized influences and theories on oppression; psychological and mental health implications of oppression; and the ways in which psychological science can be applied to address these issues. **Prerequisite(s):** PSY 300 **CC:** WS

PSY 410 - Seminar in Brain and Behavior

Course Units: 1.0 This seminar will provide students with an opportunity to examine how brain processes impact behavior and psychological functioning. Students will gain experience giving oral presentations and critically evaluating empirical studies pertaining to both normal and abnormal behavior. **Cross-Listed:** BIO 211 **Prerequisite(s):** (PSY 210 or BIO 210) and PSY 300 **CC:** SET, WAC, WS

PSY 411 - Seminar in Clinical Neuropsychology

Course Units: 1.0 This seminar provides opportunity for an in-depth view into the field of Clinical Neuropsychology, which aims to explore the relationship between brain function and behavior, especially the evaluation and treatment of individuals across the lifespan who have cognitive deficits and brain compromise (e.g., due to injury, neurodevelopmental or degenerative processes, toxic exposure, etc.). The material is interdisciplinary, integrating across various sub-disciplines of medicine (e.g. neurology, psychiatry, radiology) and subfields of psychology (e.g. neuroscience, clinical disorders, assessment, cognitive, health). Clinical cases and research reports will be used to illustrate and characterize neuropsychological phenomena, conditions, and diagnoses. The small class size will facilitate engage learning through discussion of primary research literature, student presentations, and experiential activities (e.g. , clinical interview, test administration, and community engagement/service learning opportunities). **Prerequisite(s):** PSY 300 and one of the following: PSY 210 or BIO 210 or PSY 213 or PSY 220 or PSY 250 or instructors permission **CC:** WS

PSY 420 - Seminar in Cognitive Psychology

Course Units: 1.0

The aim of this course is explore the concept of emotion from behavioral- and brain-based perspectives. While trying to understand the role of emotion in behavior has been an interest for centuries, what we know about the biological underpinnings of emotion, or affect, is only decades old.

Students will become familiar with basic concepts and methods used in affective science. Course discussions will likely include material related to pleasure/pain, mental health, neurological/psychiatric illnesses, psychotropic drugs, sexuality, eating, decision-making, and emotional regulation. **Prerequisite(s):** PSY 210 or BIO 210 or PSY 220 or permission of instructor. **CC:** WS

PSY 430 - Seminar in Social Psychology

Course Units: 1.0 A selected area of social psychology. Specific topic will be announced in advance by the instructor. **Prerequisite(s):** PSY 300 or permission of instructor. **CC:** WS

PSY 432 - Seminar in Love and Death

Course Units: 1.0 This course examines two lines of inquiry, principally initiated in the 1950's and 60's by John Bowlby and Ernest Becker, respectively, which have subsequently developed into two influential contemporary theories in experimental social and personality psychology: attachment theory and terror management theory (TMT). These theories and the intellectual traditions that spawned them address two elements of life - love and death - that have far-reaching psychological consequences and philosophical implications. The course will start with discussion of Bowlby's and Becker's classic books, and as class progresses, class members will assume increased responsibility for leading discussions and examining contemporary research. Ultimately, each class member will develop his or her own questions, and tentative answers, relating to the course material, which will culminate in a significant paper. There are no prerequisites for this course. **CC:** WS

PSY 433 - Seminar in Psychology of Sports

Course Units: 1.0 In this seminar, we'll explore a variety of ways in which psychology and sports intersect. First, we'll discuss the psychology of the athlete: Which psychological mechanisms and traits predict success in competition? Next, we'll discuss the psychology of the fan: Why are we so emotionally impacted when our team wins or loses? Finally, we'll discuss the psychology of sports marketing: How do advertisers and marketers use sports to get us to buy their stuff? Readings will primarily consist of peer-reviewed journal articles from the fields of social psychology, cognitive psychology, sports psychology, marketing, and advertising. The term will conclude with each student creating a novel hypothesis relating to the psychology of sports, designing a rigorous study with which one might empirically test that hypothesis, and creating mock data that supports that hypothesis. **Prerequisite(s):** PSY 300 or permission on instructor. **CC:** WS

PSY 440 - Seminar in Human Development

Course Units: 1.0 A selected area of developmental psychology. Topic will be announced in advance by the instructor. **Prerequisite(s):** PSY 240 or PSY 240T **CC:** WS

PSY 441 - Seminar in Adolescence

Course Units: 1.0 Development during adolescence and early adulthood, including changing relations to parents, love and sexuality, moral and cognitive growth, and the establishing of identity. The seminar will use the case study method, i.e., we will analyze a series of individual people's accounts of their adolescent experience. **Prerequisite(s):** PSY 240 or PSY 251 or permission of the instructor **CC:** WS

PSY 450 - Seminar in Clinical Psychology

Course Units: 1.0 A selected area of clinical psychology. Topic will be announced in advance by the instructor. **Prerequisite(s):** PSY 250 or permission of the instructor. **CC:** WS

PSY 451 - Clinical Psychology 3: Internship

Course Units: 1.0 Intensive practicum course designed to provide direct exposure to clinical populations, along with structured individual and group clinical supervision. Activities include placement at a psychologically-oriented internship site, along with seminar discussion of clinical cases and systems issues. Emphasis on the theoretical understanding of clinical assessment and intervention from a psychological perspective, integrating both nomothetic and ideographic approaches. **Prerequisite(s):** Permission of the instructor. **CC:** WS

PSY 452 - Seminar: Eating & Body Image

Course Units: 1 This course will focus on normative and pathological body image, weight, and eating behaviors. In the beginning of the course, students will be trained to deliver the Body Project, an empirically supported cognitive-dissonance based eating disorder prevention program. Students will develop a research idea to test with their Body Project workshop participants. Over the course of the term, students will give one Body Project workshop and write a final research paper on their findings. **Prerequisite(s):** PSY 300 and PSY 250 or permission of the instructor. **CC:** WS

PSY 480 - Psychology 1 Term Internship

Course Units: 1.0 Students gain real-world experience working on projects dealing with psychology in organizations such as hospitals, psychiatric facilities, advertising agencies, charitable organizations, government agencies, and educational institutions. Students complete 100 hours of such experience per term, and undertake a significant academic project arranged with the faculty supervisor. PSY 480 is a one-term internship. **Prerequisite(s):** PSY 100

PSY 481 - Psychology 2 Term Internship 1

Course Units: 0.0 Students gain real-world experience working on projects dealing with psychology in organizations such as hospitals, psychiatric facilities, advertising agencies, charitable organizations, government agencies, and educational institutions. Students complete 100 hours of such experience per term, and undertake a significant academic project arranged with the faculty supervisor. A two-term internship, PSY 481 and PSY 482, spans two terms and earns two course credits. The first term is graded pass/fail; a comprehensive grade is assigned for both terms at the end of the second term. **Prerequisite(s):** PSY 100

PSY 482 - Psychology 2 Term Internship 2

Course Units: 2.0 Students gain real-world experience working on projects dealing with psychology in organizations such as hospitals, psychiatric facilities, advertising agencies, charitable organizations, government agencies, and educational institutions. Students complete 100 hours of such experience per term, and undertake a significant academic project arranged with the faculty supervisor. A two-term internship, PSY 481 and PSY 482, spans two terms and earns two course credits. The first term is graded pass/fail; a comprehensive grade is assigned for both terms at the end of the second term. **Prerequisite(s):** PSY 481

PSY 487 - Psychology 3 Term Thesis 1

Course Units: 0.0 Psychology and Neuroscience majors may enroll in three-term theses, but such projects involve materially greater effort and accomplishment than a two-term thesis. The three-term thesis is not to be used to conduct a standard two-term thesis in three terms. Whether a two- or three-term thesis is conducted should be determined with the thesis advisor before the thesis commences.

PSY 488 - Psychology 3 Term Thesis 2

Course Units: 0.0 Psychology and Neuroscience majors may enroll in three-term theses, but such projects involve materially greater effort and accomplishment than a two-term thesis. The three-term thesis is not to be used to conduct a standard two-term thesis in three terms. Whether a two- or three-term thesis is conducted should be determined with the thesis advisor before the thesis commences. **Prerequisite(s):** PSY 487

PSY 489 - Psychology 3 Term Thesis 3

Course Units: 3.0 Psychology and Neuroscience majors may enroll in three-term theses, but such projects involve materially greater effort and accomplishment than a two-term thesis. The three-term thesis is not to be used to conduct a standard two-term thesis in three terms. Whether a two- or three-term thesis is conducted should be determined with the thesis advisor before the thesis commences. **Prerequisite(s):** PSY 488 **CC:** WS

PSY 490 - Psychology Independent Study 1

Course Units: 1.0 Involves a commitment commensurate with that of a typical course, typically involves a lengthy term paper or research report, and is awarded a letter grade and one course credit. Details of the project will be determined by the student and the faculty supervisor. Only one course of this type may count towards the twelve courses needed for the psychology major.

PSY 491 - Psychology Independent Study 2

Course Units: 1.0 Involves a commitment commensurate with that of a typical course, typically involves a lengthy term paper or research report, and is awarded a letter grade and one course credit. Details of the project will be determined by the student and the faculty supervisor. Only one course of this type may count towards the twelve courses needed for the psychology major. **Prerequisite(s):** PSY 490

PSY 492 - Psychology Independent Study 3

Course Units: 1.0 Involves a commitment commensurate with that of a typical course, typically involves a lengthy term paper or research report, and is awarded a letter grade and one course credit. Details of the project will be determined by the student and the faculty supervisor. Only one course of this type may count towards the twelve courses needed for the psychology major. **Prerequisite(s):** PSY 491

PSY 493 - Psychology 2 Term Independent Study 1

Course Units: 0.0 First term grade is normally pass or fail. A comprehensive grade for both terms is assigned at the end of second term.

PSY 494 - Psychology 2 Term Independent Study 2

Course Units: 2.0 First term grade is normally pass or fail. A comprehensive grade for both terms is assigned at the end of second term. **Prerequisite(s):** PSY 493

PSY 495 - Psychology 1 Term Senior Project

Course Units: 1.0 Is a scholarly endeavor that does not necessarily involve the collection or analysis of primary data. The project is outlined in consultation with a faculty supervisor and typically requires an in-depth literature review on a topic or question or interest. (One-term senior project earns one coursecredit) **CC:** WS

PSY 496 - Psychology 2 Term Senior Project 1

Course Units: 0.0 Is a scholarly endeavor that does not necessarily involve the collection or analysis of primary data. The project is outlined in consultation with a faculty supervisor and typically requires an in-depth literature review on a topic or question or interest. Two-term senior project spans two terms and earns two course credits. The first term is graded pass/fail; a comprehensive grade is assigned for both terms at the end of the second term.

PSY 497 - Psychology 2 Term Senior Project 2

Course Units: 2.0 Is a scholarly endeavor that does not necessarily involve the collection or analysis of primary data. The project is outlined in consultation with a faculty supervisor and typically requires an in-depth literature review on a topic or question or interest. Two-term senior project spans two terms and earnstwo course credits. The first term is graded pass/fail; a comprehensive grade is assigned for both terms at the end of the second term. **Prerequisite(s):** PSY 496 **CC:** WS

PSY 498 - Psychology Senior Thesis 1

Course Units: 0.0 First term grade is pass or fail; a comprehensive grade for both terms is assigned at the end of the second term. **Prerequisite(s):** PSY 300

PSY 499 - Psychology Senior Thesis 2

Course Units: 2.0 First term grade is pass or fail; a comprehensive grade for both terms is assigned at the end of the second term. **Prerequisite(s):** PSY 498 **CC:** WS

Religious Studies

REL 103 - Introduction to Religious Studies

Course Units: 1.0 This course introduces students to the academic study of religion through an investigation of central topics such as sacred space, sacred text, myth, ritual, ethics, religion and society, concepts of the divine and ultimate reality, anthropology, and others. Examples for discussion are drawn from a variety of religious traditions including Judaism, Christianity, Islam, Hinduism, and Buddhism, as well as other religious traditions, ancient and modern. Attention is also given to aspects of religion in contemporary settings. **CC:** HUL, LCC, HUM, JCHF **ISP:** REL

REL 110 - Ancient Egypt: History and Religion

Course Units: 1 This course offers an overview of the history of ancient Egypt from the rise of the state under the first pharaohs (3200 BC) to its incorporation into the Hellenistic and Roman empires. Attention isgiven to political and social organization, foreign relations, and religion based on a study of relevant ancient texts (in translation) and archaeological evidence. **Cross-Listed:** CLS 110 **ISP:** AFR, REL

REL 160 - Introduction to Buddhism

Course Units: 1 This introductory course explores Buddhist understandings of the human condition and visions of human flourishing. We cover the major histories, doctrines and practices of Buddhism, from the fifth century BCE to the present day, by engaging sacred texts from the Buddhist canon as well as poetry, literature, autobiography and film. We consider how Buddhism has changed and evolved as it spread from India, to Central and East Asia and, more recently, to the West. Key themes include the question of suffering, the nature of compassion, training the emotions, and the place of the ordinary and imperfect within Buddhist visions of enlightenment. Throughout the course, we

consider the relevance of class material to our own views and experiences of the world, and to the question of how we should live our lives. **CC:** HUM **ISP:** AIS

REL 170 - Myth, Ritual and Magic

Course Units: 1.0 This course examines some of the theoretical issues surrounding myth, ritual and magic as well as specific examples of their cultural expression. How do people make sense of themselves, their society and the world through myth and ritual? How do cosmology and belief systems help them gain and organize knowledge about the world and themselves? The course will be examining a number of "occult" and "esoteric" practices, that is, practices that were not commonly known to all members of society, including Sufism, kabbalah, alchemy, and shamanism. **Cross-Listed:** ANT 170 **CC:** HUM, LCC **ISP:** REE, REL **Note:** Electives (only one cross-listed course can count for the major or minor)

REL 201 - Darwin and Design

Course Units: 1 "A bird's wings are designed for the purpose of flying." Is this a scientific statement? Is it testable? Is it true (in any sense)? For thousands of years humans have looked at the natural world and perceived evidence of design and *telos* (purpose). The scientific theory of biological evolution, most famously associated with Charles Darwin, undercut this tradition by providing a testable (and subsequently well-validated) non-telic explanation of biological complexity. This course examines the history of the concept of organismal design in Western thought, Darwin's pivotal place in that history, and the subsequent development of the idea up to the present day, including the recent controversy surround the so-called "theory of intelligent design." **CC:** HUM, WAC

REL 203 - Judaism/Christianity/Islam: Comparative Perspectives

Course Units: 1.0 This course offers a comparative approach to Judaism, Christianity and Islam, three closely related religious traditions. It attempts to draw out commonalities among and differences between these traditions by focusing on their histories, their understandings of God, revelation and tradition, religion and society, and responses to social and political change. **Cross-Listed:** HST 203 **CC:** HUM, LCC, SOCS **ISP:** REL

REL 210 - Religion, Evil and Suffering

Course Units: 1 It's easy to identify acts of evil and experiences of suffering, both currently and historically, that seem senseless and meaningless. So why do evil and suffering exist in the world? Since religions claim to make sense of human existence and how the world works, do evil and suffering constitute an insurmountable problem for them? Are evil and suffering more of a challenge to some religious traditions than to others? This course critically examines responses to the problem of evil and suffering that are offered by various religious traditions (Judaism, Christianity, Islam, Hinduism and Buddhism), how their distinctive answers arise from key concepts within each religion, and how answers have changed over time in response to intellectual and moral developments. The course also addresses recent critical appraisals of religion around the questions: Is religion itself a source of evil and suffering? And, can science offer better explanations for suffering and evil via the theory of evolution, the 'selfish gene', or sociobiology? Readings engage historical, philosophical, psychological and biological perspectives, as well as primary texts from the religious traditions. **CC:** HUM

REL 230 - Judaism and Christian Origins

Course Units: 1.0 We know that Jesus of Nazareth was Jewish, so how is it that Christianity and Judaism became separate religions? This course attempts to answer this question by investigating the nature of the relationship between earliest Christianity and Rabbinic Judaism, drawing out their shared roots in the religion and literature of ancient Israel, and exploring the diverse expressions of second temple Judaism among which the two religious traditions emerged. It also explores their distinctive religious teachings and scriptural interpretations with a particular interest in

understanding how and why Christianity and Judaism, despite their commonalities, parted ways and became independent religions. **Cross-Listed:** CLS 230 **CC:** HUM, LCC, WAC **ISP:** REL

REL 251 - Death and Afterlife in World Religions

Course Units: 1 This course investigates how various religions (Judaism, Christianity, Islam, Hinduism, Buddhism, Daoism, and examples of indigenous and ancient religions) understand death and the afterlife, and how this understanding relates to views of the human person. The course also discuses religious rituals pertaining to death, near death experiences, the undead, and contemporary practices such as public memorization. Our study of death and the afterlife draws on a variety of methods: history, anthropology, sociology, philosophy. **CC:** LCC, HUM, JCHF

REL 260 - Zen Buddhism and Meditation

Course Units: 1 This course is an overview of the advent and development of Zen (Chinese: Chan), a form of Buddhism centered on the practice of meditation. Using both primary and secondary sources, we cover the premodern origins of Buddhist meditation in India, the institutionalization of Chan in China, and its subsequent transnational journey throughout Japan, East Asia and the world. We consider the influence of Zen on the modern mindfulness movement and on widespread secular interest in meditation and wellness. Major subthemes include the question of religious experience; history and genealogy; Zen theories of language; Zen modernism and its influence in psychology, neuroscience and medicine. Throughout the course, we highlight the continual processes of translation, change and adaptation that have characterized Zen Buddhism since its beginning. **CC:** LCC, HUM **ISP:** AIS

REL 269 - Religions/Societies of Asia

Course Units: 1 This course offers an introduction to the study of religion in Asian societies. We will begin by discussing classical approaches to defining religion and studying its role in society. We will then answer two critical questions about religion. First, what do religious beliefs and practices look like in various parts of Asia? Second, how do these beliefs and practices inform people's everyday lives? We will explore each of these questions at the level of society, at the level of organizations within society, and at the level of individuals. This course surveys a broad range of religious ideas and practices belonging to different Asian traditions. Our survey includes Buddhism, Hinduism, Confucianism, Taoism, and Islam. These religious traditions are important factors in the history, cultures, and literatures of South Asia, Southeast Asia, Central Asia, and East Asia. **CC:** LCC, HUM **ISP:** AIS

REL 271 - Religion and Food

Course Units: 1.0 Why do we eat the things we eat in the way we eat them? Used in religious rituals, food can become a potent symbolic expression of people's relationships to one another, the world, and to the Ultimate. Historically, food has been an integral part of religious activity through practices such as preparation, consumption, and fasting. In order to understand these practices better, the course begins with a brief exploration of how food functions in culture generally to create and sustain meaning. The bulk of the course investigates the place of food in the rituals and beliefs of four of the world's great religious traditions: Judaism, Islam Hinduism and Christianity. The course also examines the phenomena of over- and under-eating in light of the importance given to feasting and fasting in these religious traditions. **CC:** HUM, LCC **ISP:** LAW, REL

REL 275 - East-West Contacts and the Invention of Everyday Cultures

Course Units: 1 Tracing the history of various aspects of people, things and ideas that we encounter in our daily life will provide insight into how South and West Asian civilizations have affected people's lives in the present day. We will examine the influences and impact of these civilizations by looking at aspects such as migration, culinary cultures, fashion, trade, religion, and gender, and trace the trajectories of how they spread to different parts of the world.

Through this course students will understand how civilizations evolved over time and how cross-cultural exchanges continue to shape societies. **ISP:** AIS, REL

REL 280 - Religion and Science

Course Units: 1.0 This course explores the historical and contemporary relations between several of the world's major religions and the natural sciences. The presently pervasive "conflict" view is examined, along with alternative views. The course assumes no background in science beyond high school, nor adherence to any particular religious tradition. **CC:** HUM **ISP:** REL

REL 282 - Entaglement

Course Units: 1 Quantum entanglement is one of the most remarkable ideas emerging from the natural sciences in the twentieth century. Identified as a consequence of quantum theory already in the 1930s, it was confirmed as a physical phenomenon only in the 1980s. The broader implications of living in an "entangled" world are only beginning to be felt outside the halls of physics departments. In this course we explore the meaning of quantum entanglement and its potential significance for relational accounts of personhood, life, the cosmos, and God. We begin the course by considering briefly the turn to "relationality" in much contemporary philosophical and religious thought. With this broader intellectual background in place, we devote several weeks to exploring the philosophical structure and meaning quantum theory. We then turn back the clock and examine the concepts of "locality" and "separateness" in so-called "classical" physics (i.e., physics before quantum theory and -- we now know -- by the world itself. The material up to this point in the course prepares us for the next crucial step: working through and discussing the implications of two now-famous scientific papers: first, the so-called "EPR Paper" written by Albert Einstein and two of his colleagues in 1935 and, second, the so-called "Bell's Theorem Paper" written by John Bell in 1964 which uncovered an experimental constraint entailed by any theory that respects locality and separability. The significance of Bells' work lies in the fact that both quantum theory and subsequent experiments *violate* these constraints. Apparently, and very much contrary to what Einstein believed, we live in a "nonlocal," "nonseparable" or "entangled" world. Although Bell's work initially went unnoticed, a group of hippie scientist in Berkeley, California played a central role in drawing attention to its profound implications. During the remainder of the term, we engage contemporary philosophical and religious/theological scholars who seek to put quantum theory and entanglement into conversation with various humanistic and religious perspectives on meaning, ethics and God. Our goal is to think alongside these philosophical and religious/theological writers about what the discovery of quantum entanglement means for the way we think about reality and our place in it. During the final two weeks of the course we watch and critique the move *What the Bleep Do We Know?* in order to sharpen our critical skills regarding the risk of uncritically incorporating quantum ideas into humanistic discussions. Time is also given to several one-on-one checks-ins with the professor about final paper topics. **CC:** HUM

REL 295H - Religious Studies Honors Independent Study 1

Course Units: 1.0

REL 296H - Religious Studies Honors Independent Study 2

Course Units: 1.0

REL 300 - Seminar: Theory and Method in the Study of Religion

Course Units: 1.0 This course offers an introduction to the theory and methodology of the academic study of religion. It explores several of the most influential efforts to develop theories of religion and methods for its study, including approaches found in disciplines such as anthropology, sociology, psychology and phenomenology. The course adopts

an historical perspective, outlining issues and developments in the field from the Enlightenment through to today. **CC:** HUM **ISP:** REL

REL 315 - Religious Fundamentalism

Course Units: 1 Considering religious fundamentalism in the context of modernity and globalization, this course examines the character, development, variety, and continuing significance globally of religious fundamentalism through a comparative study of examples drawn from Judaism, Christianity, Islam, Hinduism and Buddhism. The course considers case studies that elucidate the social, political and ethical implications of religious fundamentalism with respect to a number of key current issues: the state/nationalism; law; science; education; women. **CC:** HUM

REL 360 - Religion/Power/Culture: SE Asia

Course Units: 1 How do we understand power and culture in Buddhist Southeast Asian societies? What are the enduring arrangements of power and belief that distinguish these societies, and how have these arrangements been changed by processes of globalization, modernization, and development? To help answer these questions, this course examines Buddhist Southeast Asia from the perspective of its peoples. We will discuss a range of themes, such as religion, the role of women, supernaturalism, politics, health, and violence. We will read scholarship in history, religious studies, and anthropology. **CC:** HUM **ISP:** AIS, REL

REL 490 - Religious Studies Independent Study 1

Course Units: 1.0

REL 491 - Religious Studies Independent Study 2

Course Units: 1.0

REL 498 - Religious Studies Senior Thesis 1

Course Units: 0.0

REL 499 - Religious Studies Senior Thesis 2

Course Units: 2.0 **CC:** WS

Russian and East European Studies

REE 295H - Russia and Europe Honors Project 1

Course Units: 0.0

REE 296H - Russia and Europe Honors Project 2

Course Units: 1.0

REE 300T - Conflict in the Post-Soviet Space: Armenia

Course Units: 1 This course introduces the general theories of conflict and conflict resolution and then focuses on a select number of conflicts in the Post-Soviet Space (PSS) in depth (case studies). Special attention will be paid to the links between the state policy and conflicts, conflict resolution, and conflict prevention as well as the connection between these conflicts and international terrorism, the future of conflict prevention and preventive diplomacy, and the processes of integration and disintegration in the PSS. Taught in Armenia. **CC:** JCHF, JSPE **ISP:** ENS

REE 490 - Russia and East Europe Independent Study

Course Units: 1.0

REE 498 - Russia and East Europe Thesis 1

Course Units: 0.0

REE 499 - Russia and East Europe Thesis 2

Course Units: 2.0 **CC:** WS

Russian

MLT 230 - Madness and The Mad in Russian Culture

Course Units: 1.0 In this course we will investigate illness and its various representations in 19th and 20th century Russian culture. Specific emphasis will be placed on madness, disease and death in our discussion of various literary and historical madmen. The course will be conducted as a combination of lectures and class discussion. An occasional film will be shown. **Cross-Listed:** RUS 330 **CC:** HUL, HUM, LCC, WAC **ISP:** REE

MLT 260 - The Vampire as Other in East European and American Culture

Course Units: 1.0 We will discuss the present distribution of the East European peoples, their prehistory, and their relation to other peoples of Europe and Asia. We will also survey their early culture, including pagan, animistic, and dualistic religious beliefs, and Christianization. Our focus will be the myth of the vampire, which has had enduring power not only in Eastern European folk belief but also in American popular culture right up to the present day. **CC:** HUL, HUM, LCC, JCHF, JLIT **ISP:** FLM, REE

MLT 262 - Russia: Magnificence, Mayhem, and Mafia

Course Units: 1.0 Through analysis of literature, film, and visual arts we will discuss the Russian impact on the world with all its manifestations, constructive and destructive, and we will also attempt to "imagine" Russia in the future. Do you want to know more about Dostoevsky, communist and post-communist Russia, and, most importantly, the Russian Mafia? **CC:** HUL, HUM, LCC **ISP:** REE

MLT 265 - Soviet and Russian Film Revolutions: Political, Social, Cultural

Course Units: 1.0 At its inception, Soviet film was intertwined with political revolution. In masterpieces such as Eisenstein's The Battleship Potemkin and Pudovkin's Mother, film directors sought to portray the Bolshevik take-over as a legitimate and inevitable response to oppression. Who could imagine that the same country would produce Little

Vera, a film about the sexual revolution of the 1980's or Brother, a hero-story about assassins? This course will follow the trajectory of Soviet and Russian cinema from the 1917 Revolution to the present day, as it was used to chronicle social and cultural upheavals. **CC:** HUM, LCC **ISP:** FLM, REE

RUS 100 - Basic Russian 1

Course Units: 1.0 For students with no knowledge of Russian. An introduction to the language, with emphasis on oral skills and communicative proficiency. Contact the Russian professor if you have experience in the language. **CC:** HUM, JWOL **ISP:** REE

RUS 101 - Basic Russian 2

Course Units: 1.0 Continuation of RUS 100 **Prerequisite(s):** RUS 100 or two years of high school Russian. **CC:** LCCR, HUM, GWOL **ISP:** REE

RUS 102 - Basic Russian 3

Course Units: 1.0 A continuation of RUS 101 , with increasing attention paid to reading simple, every day texts. **Prerequisite(s):** RUS 101 or equivalent. **CC:** LCCR, HUM **ISP:** REE

RUS 200 - Intermediate Russian 1

Course Units: 1.0 Intensive development of the four proficiency skills (speaking, listening, reading, writing) with continued emphasis on strategies of basic conversation. **Prerequisite(s):** RUS 102 or equivalent. **CC:** LCCR, HUM **ISP:** REE

RUS 201 - Intermediate Russian 2

Course Units: 1.0 Continuation of RUS 200 **Prerequisite(s):** RUS 200 or equivalent. **CC:** LCCR, HUM **ISP:** REE

RUS 202 - Advanced Russian

Course Units: 1.0 Development of skills and vocabulary necessary to deal with conversation about and texts on Russian cultural life. Basic grammar review. **Prerequisite(s):** RUS 201 or equivalent. **CC:** HUM, LCCR **ISP:** REE

RUS 224T - The Russian Language Studied Abroad 1

Course Units: 1.0

RUS 225T - The Russian Language Studied Abroad 2

Course Units: 1.0

RUS 226T - The Russian Language Studied Abroad 3

Course Units: 1.0

RUS 227T - The Russian Language Studied Abroad 4

Course Units: 1.0

RUS 230 - Contemporary Russian Culture

Course Units: 1.0 A course that combines expanding oral, aural, and written skills with an introduction to contemporary issues in Russian culture and political life. **Prerequisite(s):** RUS 202 or instructor's permission. **CC:** LCCR, HUM **ISP:** REE

RUS 250T - The Russian Language Studied Independently Abroad 1

Course Units: 1.0

RUS 251T - The Russian Language Studied Independently Abroad 2

Course Units: 1.0

RUS 295H - Russian Honors Independent Study 1

Course Units: 0.0

RUS 296H - Russian Honors Independent Study 2

Course Units: 1.0 **CC:** HUM

RUS 300 - Survey of Russian Literature 1: From Pushkin to Revolution

Course Units: 1.0 Readings that begin with the godfather of Russian literary life, Aleksander Pushkin, and that ends on the eve of the October revolution. Continued attention to development of vocabulary and oral presentation. **Prerequisite(s):** RUS 202 or instructor's permission. **CC:** HUM, LCCR **ISP:** REE

RUS 301 - Survey of Russian Literature 2: From Revolution to Present

Course Units: 1.0 Readings ranging from the great revolutionary writers (Mayokovsky, Babel, Platonov, etc.) to contemporary writers of interest. **Prerequisite(s):** RUS 300 **CC:** HUL, LCCR **ISP:** REE

RUS 302 - The Russian Short Story: Pathologies of the Everyday

Course Units: 1.0 A survey of Russian short prose, with emphasis on its reflected/distorted images of Russian everyday life. Includes Gogol, Tolstoy, Gorky, Kharms, Petrushevskaia, and others. **CC:** HUL, LCCR **ISP:** REE

RUS 330 - Madness and The Mad in Russian Culture

Course Units: 1.0 In this course we will investigate illness and its various representations in 19th and 20th century Russian culture. Specific emphasis will be placed on madness, disease and death in our discussion of various literary and historical madmen. The course will be conducted as a combination of lectures and class discussion. An occasional film will be shown. **Cross-Listed:** MLT 230 **CC:** HUL, HUM, LCCR, WAC **ISP:** REE

RUS 490 - Russian Independent Study 1

Course Units: 1.0 **Prerequisite(s):** One 300-level course and permission of the instructor.

RUS 491 - Russian Independent Study 2

Course Units: 1.0 **Prerequisite(s):** One 300-level course and permission of the instructor.

RUS 492 - Russian Independent Study 3

Course Units: 1.0 **Prerequisite(s):** One 300-level course and permission of the instructor.

Scholars Program

SCH 150 - Scholars Research Seminar

Course Units: 1.0 Ensures that students have an early hands-on experience thinking and working as an academic researcher. Note that students in the Scholars Program take the Scholars Research Seminar (SCH 150) after the Scholars Preceptorial. **CC:** WAC-R

SCH 295H - Scholars Honors Independent Project 1

Course Units: 0.0 First half of the two term, one credit independent project required of all scholars. Scholars will need written permission from the supervising faculty member to engage in a project. First half is graded pass/fail. Second half is graded with a letter. Students will register for their project with the department designation of the supervising faculty member's department instead of the SCH prefix.

SCH 296H - Scholars Honors Independent Project 2

Course Units: 1.0 Second half of the two term, one credit independent project required of all scholars. Scholars will need written permission from the supervising faculty member to engage in a project. First half is graded pass/fail. Second half is graded with a letter. Students will register for their project with the department designation of the supervising faculty member's department instead of the SCH prefix. **Prerequisite(s):** SCH 295H

SCH 297H - Scholars Honors Independent Project

Course Units: 1.0 Scholars will be able to use any course as the basis for their project. They will then go on to register for 297H, which will be a one term, one credit, letter graded course that replaces SCH 295H and SCH 296H . The learning outcomes for 297H will remain the same whether the Scholar chooses the current option (295H and 296H) or the new option. Individual faculty will oversee the project and will decide how best to achieve these learning outcomes based on the needs and skills of the student. Students will register for their project with the department designation of the supervising faculty member's department instead of the SCH prefix.

SCH 400 - Senior Colloquium

Course Units: 1.0 Senior Colloquium is the capstone honors course for students in the Scholars Program. The topic is appropriate to Scholars in the senior year regardless of major. Permission to enroll may also be given for Scholars in their sophomore and junior years at the discretion of the instructor. It is usually offered in the spring term and is only graded on a pass/fail basis.

Science, Medicine, and Technology in Culture

STS 101 - Intro to Science, Technology, and Society

Course Units: 1 This course introduces students to the range of methodologies, epistemologies, topics, and concerns central to the fields of Science, Technology, and Society (STS). How do scientific concepts develop, take root, and evolve? What range of roles do scientists and engineers play as they interact and intersect with broader societies? How might scientific practice and theory affect public planning and discourse? What are the social, political, anthropological, moral, religious, philosophical, and ethical dimensions of technosciences complex roles in human cultures and societies? These are some fundamental questions that we will explore together in this survey course, which is a team-taught class offered by three or four of Union Colleges faculty members. **CC:** GCHF, GETS **ISP:** STS

STS 498 - Science, Technology, and Society Senior Thesis 1

Course Units: 0.0

STS 499 - Science, Technology, and Society Senior Thesis 2

Course Units: 2.0 **CC:** WS

Sociology

SOC 100 - Introduction to Sociology

Course Units: 1.0 The basic concepts and perspectives of sociology, including a survey of the major social institutions, social aspects of personality, and the processes of social interaction. **CC:** SOCS, JCHF, JSPE

SOC 201 - Social Data Analysis

Course Units: 1.0 The analysis of social science data. Emphasis on testing substantive hypotheses by means of computer data processing and statistical techniques. **Cross-Listed:** PSC 220 **Prerequisite(s):** SOC 100 **CC:** QMR, SOCS **ISP:** ENS

SOC 202 - Social Problems, Policy and Pop Culture

Course Units: 1.0 Identification of social forces and cultural images of major social problems (i.e. substance abuse, violence, crime, pollution) and relevant social policies. **Prerequisite(s):** SOC 100 **CC:** SOCS, JCHF, JSPE **ISP:** ENS

SOC 203 - Social Psychology

Course Units: 1.0 **Cross-Listed:** PSY 230 **Prerequisite(s):** PSY 100 is required per the Psychology Department due to its cross-listing with PSY 230 . SOC 100 **will not satisfy** this course alone. **CC:** SOCS

SOC 204 - Social Construction of Deviance

Course Units: 1.0 An examination of "deviance" as a sociological phenomenon, including how the deviant label develops and how those so labeled are treated and controlled. Crime, prostitution, witch persecutions, mental illness, and the shaping of sexual identities and preferences are investigated. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** GSWS

SOC 205 - Social Work and Human Services

Course Units: 1.0 The history of social services and the development of the profession of social work. Social problems and society's response to these problems will be investigated. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** GSWS

SOC 206 - Aging and Society

Course Units: 1.0 The social, psychological, and economic consequences of aging, with an emphasis on successful aging. Social programs and policies for the aged are evaluated. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** GSWS

SOC 207 - Sociology of the Black Religious Experience

Course Units: 1.0 Sociology of Black Religious Experiences is a sociological analysis of a pivotal sector of Black communities, namely Black religious institutions and spiritual encounters. Topics include slave religions, the founding of independent Black churches, the Black musical heritage, Voodoo, and the legacies of Malcom X and Martin Luther King, Jr. and Black Lives Matter issues. The cornerstone of the course is the examination of how Social Justice and spiritual expression are interconnected and socially constructed. **Prerequisite(s):** SOC 100 **CC:** LCC, SOCS, JCHF, JSPE

SOC 209 - Staging Black Feminisms

Course Units: 1.0 This course considers the feminist and anti-racist practices of Black female dramatists, placing their plays within their cultural contexts. We will examine the ways in which these works construct Black feminist histories, genealogies, and cultures while challenging racial and sexual hierarchies in both American society and artistic canons. Each week, students will read a landmark dramatic text by a Black female playwright as well as seminal sociological texts and scholarly studies that contextualize the work within broader artistic and social movements. Through discussions, field trips including attendance at theatrical performances and other cultural events, reading responses, and a final presentations based on individual research, students will hone their thinking about the development of Black female voices in American dramatic literature and society. **Cross-Listed:** ATH 248 , EGL 268 **Prerequisite(s):** SOC 100 or GSW 100 or a 100-level EGL **CC:** SOCS, HUM, HUL, WAC, JCAD, JCHF, JLIT, JSPE

SOC 212 - The American Family and Cross-Cultural Perspectives

Course Units: 1.0 This course examines historical and contemporary patterns of American family from cross-cultural perspectives. We explore the ways in which race/ethnicity, social class, gender roles, conflict and crisis, and the media influence family life. **Prerequisite(s):** SOC 100 **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AFR, AMS, GSWS

SOC 221 - School Social Work

Course Units: 1.0 This course focuses on the optimal use of Social Work in the public school setting as well as the role of the school in delivering human services effectively. Public education has long been considered the great equalizer in American society. This course will analyze the fundamental mission of both Social Work and schools to provide equal access and opportunity for our youngest generation. **Prerequisite(s):** SOC 100 **CC:** SOCS

SOC 222 - Schools and Societies

Course Units: 1.0 Sociological analysis of education as an institution over time and across societies. **Prerequisite(s):** SOC 100 **CC:** SOCS, JSPE **ISP:** AMS

SOC 223 - Sociology of Religion

Course Units: 1.0 The role of religion and religious phenomena from an institutional, organizational, and individual perspective in contemporary and historical context, exploring the interplay between the public and private spheres. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS, REL

SOC 224 - Sociology of Community

Course Units: 1.0 How communities and their residents respond to external environments and internal organization. A series of case studies of urban, rural, and suburban communities and their effect on social behavior is a focus. **Prerequisite(s):** SOC 100 **ISP:** AMS

SOC 225 - Sociology of Work, Occupations, and the Professions

Course Units: 1.0 Sociological analysis of work in a modern industrial society; emphasis on the professions in terms of role behavior, education, socialization, and division of labor.

SOC 226 - Medical Social Work

Course Units: 1

An overview of the social work role in health care settings as an advocate, practitioner, and leader within interdisciplinary teams. A comprehensive view of the professional values, theories, and methods that social workers utilize in this role to provide advocacy, individual, family and group counseling, educate patients and families, effective crisis intervention, resource referrals and influence public health policies.
Prerequisite(s): SOC 100 **CC:** SOCS **ISP:** STS

SOC 228 - Sociology of Medicine

Course Units: 1.0 Sociological perspectives on health, illness, the health professions and institutions, including studies of the social components of disease and its distribution, doctor-patient relations, and alternative health-care systems. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** STS

SOC 230 - Sociology of the Black Community

Course Units: 1.0 This course is an introduction to African American society as revealed in the empirical literature of social sciences. Teaching and Learning in the context of this class will be multidimensional. You will learn about social structure and inequalities through readings, lectures, discussions, popular media examples, and field trips. Using these pedagogical strategies, our class will work as a learning community to explore contemporary issues relating to African American experiences. **Prerequisite(s):** SOC 100 **CC:** LCC **ISP:** AFR, AMS

SOC 231 - Sex and Gender in American Society

Course Units: 1.0 An examination of gender and the social context of the behavior of men and women in contemporary American Society. **Prerequisite(s):** SOC 100 **ISP:** AMS, GSWS

SOC 233 - Race, Class, Gender, and Sexuality

Course Units: 1.0 The issues of gender, race, and class as organizing principles within sociology. The course draws broadly from the critical tradition, which focuses on issues of power, control, opportunity, gender, and economic relations. **Prerequisite(s):** SOC 100 **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AFR, AMS, GSWS

SOC 240 - Political Sociology

Course Units: 1.0 Explores issues of political power, domination, and legitimacy from a sociological perspective. Topics include the creation and maintenance of political power and the impact of political socialization. **Cross-Listed:** PSC 284 **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AFR, AMS, ENS, LAW

SOC 260 - Population and Society: Demographic Trends

Course Units: 1.0 An introduction to the study of human populations and the dynamics of birth, death and migration. Focus on how populations grow and decline and the implications for social policy in areas such as health, aging, social inequality, the environment, immigration and urban life. **Prerequisite(s):** SOC 100 **ISP:** ENS

SOC 261 - Crime and Justice in Society

Course Units: 1.0 The social construction of crime and delinquency as social and legal categories; perspectives on causation and consequences of the societal reaction to crime. **Prerequisite(s):** SOC 100 **ISP:** LAW

SOC 262 - Juvenile Delinquency

Course Units: 1.0 An overview of sociological theory and research concerning juvenile delinquency and youth culture. Analyzes causes of juvenile delinquency, current strategies to control delinquency, perceptions of youth crime and contemporary youth problems. In addition, the course considers the strategies young people historically employ to counter situations of deprivation, alienation, and isolation **Prerequisite(s):** SOC 100 **CC:** SOCS

SOC 270 - Social Movements, the Environment, and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** PSC 283 **Prerequisite(s):** SOC 100 **ISP:** AMS, ENS, STS

SOC 271 - Sociology of Disaster

Course Units: 1.0 This course is an introduction to the sociological analysis of disasters. We will consider how sociologists conceptualize and theorize about disasters and the social and physical damage, death and injury, and economics loss they involve. Variations in the vulnerability of communities and particular social groups to such events will also be examined. **Prerequisite(s):** SOC 100 **ISP:** ENS

SOC 284 - Sociology of Women & Health

Course Units: 1.0 A critical introduction to the sociological analysis of issues in women's health in the contemporary United States, emphasizing how the key variables of gender, race & class structure access to health & well-being for women in our society. **Prerequisite(s):** SOC 100 **ISP:** AMS, GSWS, STS

SOC 285 - Food, Nutrition and Society

Course Units: 1.0 In this course we will explore the social construction of food and its emotional and cultural meaning. How do social structures, such as education, affect how we eat? Included in the topics addressed in this course are how gender, culture, socio-economic status, ethnicity, and media affect our food choices, nutrition, health and health care system. **Prerequisite(s):** SOC 100

SOC 290 - Personality, Media, and Society

Course Units: 1.0 How social roles and group dynamics impact personality and group behavior. Agents of socialization, with particular emphasis on the media and their impact on individual and societal expectations and values, will also be examined. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS

SOC 295H - Sociology Honors Independent Project 1

Course Units: 0.0

SOC 296H - Sociology Honors Independent Project 2

Course Units: 1.0

SOC 300 - Quantitative Methods of Social Research

Course Units: 1.0 Identifying sociopolitical questions and developing hypotheses; designing research instruments (questionnaires); basic statistics and introduction to social science computer analysis. **Prereq/Corequisite(s):** SOC 100 **CC:** SOCS, JDQR, JSPE **ISP:** ENS

SOC 302 - Qualitative Social Research Methods

Course Units: 1.0 Introduction to qualitative research methods. The course is equally concerned with research design, techniques for gathering data, ethics in research, and the translation of field data into text. **Cross-Listed:** PSC 222 **CC:** WAC-R

SOC 305 - History of Sociological Thought

Course Units: 1.0 The development of classical and contemporary sociological theory. Preference is given to Sociology majors and minors. **Prerequisite(s):** SOC 100 **CC:** SOCS, WAC

SOC 314 - America's War on Drugs: Culture, Conflict, & Social Policy

Course Units: 1.0 A critical evaluation of United States domestic and international drug policy. In this course, students will gain an understanding of domestic and international drug policy, and will apply a sociological perspective to understand the historic and current situational forces which shape America's War on Drugs. We will evaluate current drug control strategies and the inequalities that have emerged as a result. This course also offers an overview of America's international war on drugs and the role it plays in other parts of the world. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS

SOC 316 - Contemporary Homelessness

Course Units: 1 In this course we will explore the emergence of homelessness in contemporary society and its consequences to human life, wellbeing, and health. To do this, we will explore the lived experience of homelessness gleaned from observational studies and research on adolescents and adults primarily in the United States but also in other places around the globe. We will do this in an effort to understand the strategies homeless people historically employ to counter situations of alienation, isolation, and deprivation. This course is not open to students who completed FPR-100-07 The Homeless Experience offered in Winter 2021. **Prerequisite(s):** SOC 100 **CC:** SOCS

SOC 322 - Sociology of Higher Education

Course Units: 1 Sociological analysis of contemporary and historical issues related to higher education within and outside of the United States. **Prerequisite(s):** SOC 100 **CC:** JCHF

SOC 323T - Survey of Brazilian Society

Course Units: 1 **CC:** LAS

SOC 340 - Inequality and Mobility: From Penthouse to Poorhouse

Course Units: 1.0 The forms, causes, and consequences of social inequality. Topics include objective and ideological manifestations of trends and patterns in wealth, poverty, mobility, and welfare policy. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS

SOC 346 - Sociology of Black Women's Culture

Course Units: 1.0 This course examines the socialization of black womanhood. We will explore how certain socio-historical norms shape black women's ideas about race, gender, class, sexuality, constructions of femininity, and public and private activism. Understanding the complexities of strategies of resistance to multiple and intersecting oppressions (race, class, gender, sexuality, etc.) forms the focus of the course. **Prerequisite(s):** Suggested: SOC 230 , SOC 233 , GSW 100 **CC:** LCC, SOCS **ISP:** AFR, AMS, GSWS

SOC 359 - Environmental Policy and Resource Management

Course Units: 1.0 An examination of environmental issues and problems such as acid rain, ocean dumping, and nuclear wastes, and the social forces that shape environmental policies. Students complete an internship with an environmental service theme. **CC:** SOCS **ISP:** ENS, STS

SOC 360 - Domestic Violence

Course Units: 1.0 A sociological examination of issues and questions raised by violence within American families. The public definition of family violence, subjective experiences of abusers and victims, social and individual causes and consequences of abuse, complexities and problems of social interventions. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** GSWS

SOC 362 - Family and Community Services

Course Units: 1.0 An examination of the response of community organizations and services to family life. Particular issues will include spouse and child abuse, juvenile delinquency, teenage pregnancy, daycare, and family instability and mental health. Visits to community and human service organizations will also be arranged. **CC:** SOCS **ISP:** GSWS

SOC 364 - Sex and Motherhood

Course Units: 1.0 An analysis of selected issues in the regulation of human reproduction & family building, primarily from sociological and feminist perspectives. Topics such as birth control, abortion, adolescent pregnancy, infertility & pregnancy are examined in historical and cross-cultural contexts with particular focus on the variables of gender, class and race. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS, GSWS

SOC 370 - Public Health

Course Units: 1.0 An overview of public health with emphasis on the impact of large-scale social and cultural forces on the health of the public. The epidemiology of selected diseases, injuries, and the addictive disorders; the health effects of exposure to environmental and work place toxins; the role of nutrition in health. **ISP:** ENS, STS

SOC 372 - Global Health

Course Units: 1.0 An in-depth survey of health care systems and topics from a cross-cultural perspective, of particular interest to health care providers and practitioners and to students interested in comparative health care systems particularly those planning to go on the Health Systems Term Abroad. **ISP:** STS

SOC 374 - Mental Health and Society

Course Units: 1.0 A general introduction to the social scientific study of mental health. Topics include theories of mental illness, epidemiology of mental illness, the social experience of being a mental patient, and contemporary issues in mental health. **CC:** SOCS **ISP:** STS

SOC 385 - Internships for Community Outreach

Course Units: 1.0 Designed to provide the student with work and research experience within a human service organization. **CC:** SOCS, WAC-R **ISP:** ENS

SOC 450 - Environmental Services and Policy

Course Units: 1.0 The focus of this seminar is on the implementation of different environmental policies. Internships or case studies of environmental organizations, including NYS Department of Environmental Conservation, are part of the course. **Prerequisite(s):** SOC 100 **CC:** SOCS, WAC, WAC-R, WS **ISP:** ENS

SOC 490 - Sociology Independent Study 1

Course Units: 1.0 **Prerequisite(s):** Permission of the department chair.

SOC 491 - Sociology Independent Study 2

Course Units: 1.0

SOC 492 - Sociology Independent Study 3

Course Units: 1.0

SOC 493 - Sociology Independent Study 4

Course Units: 1.0

SOC 494 - Sociology Independent Study 5

Course Units: 1.0

SOC 495 - Sociology Independent Study 6

Course Units: 1.0

SOC 496 - Sociology Independent Study 7

Course Units: 1.0

SOC 497 - Sociology Independent Study 8

Course Units: 1.0

SOC 498 - Sociology Senior Thesis 1

Course Units: 0.0 Special project for senior majors. **Prerequisite(s):** Permission of the department chair.

SOC 499 - Sociology Senior Thesis 2

Course Units: 2.0 Special project for senior majors. **Prerequisite(s):** Permission of the department chair. **CC:** WS

Spanish

MLL 318 - (Mis)representation

Course Units: 1 The main goals of this course is for students to study, discuss, and understand how some "minority" communities, such as indigenous people from the Amazon and the Andes, Afro-Latin American, Women, and the LGBTQ+ community, have been (mis)represented in Latin American culture from the end of the 19th century to the 21st century. Students will reflect on the cultures, realities, and challenges, these minoritized communities have faced and continue facing by reading literary texts, and viewing some fictional and non-fictional audiovisual material. **Prerequisite(s):** SPN 203 or permission of the instructor. **CC:** LCC, **ISP:** LAS

MLT 271 - Sustainability, Tourism and Travel in the Hispanic World

Course Units: 1 This course explores the impact of tourism and how once can become a more mindful and sustainable traveler--what does that even mean? Students will engage with terms like ecotourism, voluntourism, community tourism, agrotourism, and indigenous tourism through concrete case studies from Spanish-speaking countries, such as Spain, Costa Rica, Bolivia, Mexico, Ecuador and the Galapagos Islands. They will learn about each country's geography and critically reflect on their role as travelers. This course is highly collaborative, student-centered, participatory, and project-based. Students will read newspapers articles, scholarly articles, watch documentaries, videos, and produce weekly written reactions and design a three-week sustainable trip. **CC:** HUM, LCCS, GCHF, GWOL, WAC **ISP:** ENS, LAS

MLT 272 - Art and Politics in Spain: From the Civil War to PostFrancoism and Postmodernity

Course Units: 1.0 The impact that political events of this century in Spain have had on Spanish society and culture, as manifested in the arts in general and in literature in particular. **CC:** HUL

MLT 273 - Introduction to Spanish Cinema

Course Units: 1.0 This course examines canonical and non-canonical Spanish cinema by well-known as well as lesser-known filmmakers. In addressing questions pertaining to national and regional identities, the Spanish Civil War and the Franco dictatorship, the Spanish transition to a democratic republic and its evolving cultural values, and the country's subsequent incorporation into the European Union, the course also revisits Spain's imperial past and the country's place, today, in world affairs. Students should expect to acquire greater knowledge of Spanish cultural diversity and history, while developing further their film analysis, conversation, and writing skills. **CC:** HUM **ISP:** FLM

MLT 281 - Screening Identities in Latin American Cinema

Course Units: 1.0 A survey of the main trends in film production in Latin America since the 1950s. Readings and discussions on issues of film history, aesthetics, representation and reception will frame our critical reflection on the construction of various types identities in some of the national cinemas across Latin America. **CC:** HUM, LCC, JCAD, JCHF, WAC **ISP:** FLM, GSWS, LAS

MLT 283 - Beyond the Sunny Paradise: Caribbean literature and politics

Course Units: 1.0 This survey course offers an interdisciplinary study of Caribbean literature focusing on the political history of the region from 1898 to the present. Besides the literary texts, films and substantive readings will contribute to an examination of four main topics: Legacies of Colonialism; Race and Ethnicity; Constructed Identities; and the Caribbean Diaspora. Students will be exposed to the rich and often overlooked literary production by Caribbean writers, drawing lines of comparison and contrast among writers from several of the islands, and identifying the common literary elements and devices shared by them. The course seeks to promote a reflection on how Caribbean intellectuals explore and deal with issues of self-determination and the construction of identities. **CC:** HUL, LCC, HUM, WAC, JCHF, JLIT **ISP:** AFR, LAS

MLT 284 - Popular Religion and Politics in Latin America

Course Units: 1.0 In this course we will examine the connection between politics and popular religions in Latin America, taking a critical view of several of their manifestations without losing track of the language and "sciences" historically used to describe them. We will engage biblical, anthropological, videographic, ethnohistorical and cultural theory texts as well as oral histories and collective memories. The final goal is to tease out those ideas that have traditionally defined the terms in which we understand and explain the "popular" in religious behavior; to understand better the conflicted relationship between "popular" cultural and institutional spaces; and finally to understand why the evolution of popular religions in Latin America cannot be examined without also taking into account their political economy. **CC:** HUM, LCC **ISP:** AFR, LAS, REL

MLT 286T - Gender and Identity in Contemporary Latin American Cinema

Course Units: 1.0 This course offers an interdisciplinary study of contemporary Latin American cinema focusing on issues of representation, reception and spectatorship, and the construction of (national, cultural, gender, and racial) identity. Besides the films, reviews and substantive readings will contribute to an examination of five main topics: 1) Constructions of Gender; 2) Representations of National Identity; 3) Race and Class; 4) Queer Images; and, 5) Imagining Marginality. All films studied in class will link two or more of these topics. **CC:** HUM, LCC **ISP:** FLM, GSWS, LAS

MLT 287 - Social Realism and Cinema in Latin America

Course Units: 1.0 This course examines different styles of documentary and realist film making from Latin America. It looks critically and with a "film-eye" at the aesthetic and socio-political meanings of conventional and experimental

films dealing with social reality and its representation. We will analyze a selective, but historically contextualized and engaging, collection of films that include, among others, Luis Buñuel's Los Olvidados (1950), Hector Babenco's Pixote (1981), and Fernando Meirelles' City of God (2002). **CC:** HUM, LCC **ISP:** FLM, LAS

MLT 288 - Torture and Dictatorship in Latin American Literature

Course Units: 1.0 This course explores Latin American literature and film in the twentieth century, with a particular focus on the dictatorships and the early years after the military coups in Argentina, Chile, and Uruguay. Readings include texts by writers who stayed in their countries and wrote under the confines of censorship, texts by writers in exile, and theoretical texts on violence, torture, and censorship. Some themes and questions we will discuss are constraints of censorship, the gendering of the nation, control and punishment. **CC:** HUL, HUM, LCC **ISP:** LAS

MLT 289 - Literature of the Mexican-American Border

Course Units: 1.0 This is a class in literature, film and essays from both sides of the Mexican-American border. This course is designed to give students an under-standing of the complexities of the history, culture and sense of identity of residents from both sides. The class will be discussion based and will focus on the close readings of novels, poems, short stories and plays. **CC:** HUL, HUM, LCC **ISP:** AMS, GSWS, LAS

MLT 293 - Made in New York: Puerto Rican and Dominican Transnational Identities in American Literature & Cinema

Course Units: 1.0 The course is a survey of the cultural production and representation of the Dominican and Puerto Rican communities in New York City from the late 1950's to the present. Through the analysis of literary texts (narrative, poetry, theater) and films, students are encouraged to reflect on the forging of transnational identities and other issues (race, cultural identity, gender and masculinities) related to these two Caribbean diasporic communities in the U.S., and on the politics of their representation within the American cultural economy. **CC:** HUL, HUM, LCC **ISP:** AFR, AMS, FLM, LAS

MLT 297 - Performing Masculinities in Literature, Cinema, and Popular Culture

Course Units: 1.0 This is an exploration of how masculinities (and maleness) are performed and how men perform gender. The course is a survey of literary and cinematic texts from around the world, with emphasis on Hispanic and Latinx communities (from Spain, Spanish America, and the USA) that adopt cross-dressing as a subversive device to question and delegitimize authority at various arenas (heteronormative gender roles, sexual and national identities, state politics and citizenship, and cultural hegemony). It also seeks to dissect binary understandings of gender while exploring the concept as a performative social construct, and establishing connections with and drawing examples from literary production, cinema, and popular culture. From this angle, emphasis will be placed on the performance of socially regulated gender roles whose scripts are constantly altered and in flux, albeit at times guarded violently by diverse social members and institutions. Beyond the analysis of literary texts and films, the course incorporates critical theory and cultural artifacts (music videos, magazine ads, billboards, art works) that frame the class discussions and enable us to connect the primary texts with local and global discourses around social demarcations of gender. **CC:** HUL, HUM, WAC **ISP:** FLM, GSWS, LAS

SPN 100 - Spanish for Beginners 1

Course Units: 1.0 Spanish is the second most spoken language on earth, and it's becoming one of the most sough-after foreign languages of US employers. That's why learning Spanish is one of the best decisions a student can make today. *Spanish for Beginners* is an engaging class that teaches vocabulary and grammar, improves speaking and pronunciation, reading, writing and listening skills. It offers dynamic language learning environment, present-day events, and society. Students also participate in a weekly, small-groups lab sessions with a native speaker from Chile

where they practice Spanish in a casual and fun atmosphere. **Prereq/Corequisite(s):** This class is designed for students with little to no previous language experience or up to two years of high school Spanish. If you are a student with a different Spanish language learning experience, reach out to any Spanish faculty member for placement. **CC:** HUM, JWOL

SPN 101 - Spanish for Beginners 2

Course Units: 1.0 Spanish is the second most spoken language on earth, and it's becoming one of the most sough-after foreign languages of US employers. That's why learning Spanish is one of the best decisions a student can make today. This engaging class teaches vocabulary and grammar, improves speaking and pronunciation, reading, writing and listening skills on an intermediate beginner level through fun and interactive activities. It offers dynamic language learning environments that explore art, literature, history, customs, cuisine, the environment, present-day events, and society. Students also participate in a weekly, small-group lab sessions with a native speaker from Chile where they practice Spanish in a casual and fun atmosphere. **Prerequisite(s):** This class is uniquely designed for student who have taken Spaish for Beginners (SPN 100)at Union College or students with two to three years of high school Spanish. If you are a student with a different Spanish language learning experience, reach out to any Spanish faculty members for placement. **CC:** LCCS, HUM, JWOL

SPN 102 - Spanish for Beginners 3

Course Units: 1.0 Spanish is the second most spoken language on earth, and it's becoming one of the most sought-after foreign languages of US employers. That's why learning Spanish is one of the best decisions a student can make today. This engaging class teaches voabulary and grammar, improves speaking and pronunciation, reading, writing and listening skills on an advances beginner level through fun and interactive activities. It offrs dynamic language learning environments that explore art, literature, history, customs, cuisin, the environment, present-day events, and society. Students also participate in a weekly, small-group lab sessions with a native speaker from Chile where they practice Spanish in a casual and fun atmosphere. **Prerequisite(s):** This classis uniquely designed for students who have taken Spanish for Intermediate Beginners (SPN 101) at Union College or students with three to four years of high school Spanish. If you are a student with a different Spanish language learning experience, reach out to any Spanish faculty members for placement. **CC:** LCCS, HUM, JWOL

SPN 200 - Spanish for Intermediate Learners 1

Course Units: 1.0 SPN 200 is an interactive class designed to increase students' ability to speak, write, read and listen about more complex and varied topics. Creative project, research, one-on-one conversations with native speakers on campus, and discussions of stories, articles, and films form the Spanish-speaking would build analytical and intercultural skills, helping students work toward fluency and preparing them to be global citizens. **Prerequisite(s):** SPN 102 or equivalent or four years of secondary school Spanish. **Prereq/Corequisite(s):** This class is designed for students who have taken Spanish for Beginners 3 (SPN 102) at Union College or students with three to four years of high school Spanish. AP without a test, or an AP score of1 or 2. If you are a student with a different Spanish language learning experience, reach out to any Spanish faculty member for placement. **CC:** LCCS, HUM, JWOL

SPN 201 - Spanish for Intermediate Learners 2

Course Units: 1.0 SPN 201 is an interactive class designed to increase students' ability to speak, write, ready, and listen about more complex and varied topics. Creative projects, research, one-on-one conversations with native speakers on campus, and discussions of stories, articles, and films from the Spanish-speaking world build analytical and intercultural skills, helping students work toward fluency and preparing them to be global citizens. **Prerequisite(s):** This class is designed for students who have taken Intermediate Spanish 1 (SPN 200) at Union College or students with four years of high school Spanish, especially those who tests 3+ on the AP Exam. If you are a student with a different Spanish language learning experience, reach out to any Spanish faculty members for placement. **CC:** LCCS, HUM, GWOL, GCHF

SPN 204T - The Spanish Language Studied Abroad 1

Course Units: 1.0 See International Programs.

SPN 205T - The Spanish Language Studied Abroad 2

Course Units: 1.0 See International Programs.

SPN 206T - The Spanish Language Studied Abroad 3

Course Units: 1.0 See International Programs.

SPN 207T - The Spanish Language Studied Abroad 4

Course Units: 1.0 See International Programs.

SPN 208T - Spanish Cultures and Societies

Course Units: 1.0 See International Programs.

SPN 250 - Sustainable Travel in the Hispanic World

Course Units: 1

In this class, students will engage with terms like ecotourism, voluntourism, community tourism, agrotourism, and indigenous tourism through concrete case studies from Spanish-speaking countries, such as Spain, Costa Rica, Bolivia, Mexico, Honduras, the Amazon and the Galápagos Islands. Students will learn about each country's geography and critically reflect on their role as travelers and language learners. This course is highly collaborative, student-centered, participatory, and project-based. Students will read newspaper articles, academic articles, watch documentaries, videos. **Prerequisite(s):** For students with 4 or more years of Spanish language study, with a score of 5+4+ or above in the AP exam or SPN 201. It is also suitable for students hwo have studied in a Spanish-speaking country or for heritage speaker that can read and write in Spanish. **CC:** GWOL, WAC **ISP:** LAS, ESPE

SPN 250T - The Spanish Language Studied Independently Abroad 1

Course Units: 1.0

SPN 251 - Stories of Power, Honor, and Love

Course Units: 1 *Chronicle of a Death Foretold*, by Gabriel Garcia Marquez, is at the core of "Stories about Power, Honor, and Love" The stores from this novel will hone your creative, analytical, and critical skills as you delve into the lives of characters who met or struggles to meet society's expectations. You will study cultural practices from the past and compare them with current cultural traditions to assess how cultural systems of oppression and privilege constrain or encourage human relationships when we have to exercise power, behave honorably, or choose who we love. The readings, class discussions, writing assignments, and creative digital projects will continue to develop your Spanish language skills. Classes and assignments will be in Spanish. **Prerequisite(s):** For students with 4 or more years of Spanish language study, with a score of 5+4+ or above on the AP exam or SPN 201. It is also suitable for students who have studies in a Spanish-speaking country or for heritage speakers that can read and write in Spanish. **CC:** HUL, HUM, LCC, JLIT, JWOL, WAC **ISP:** GSWS, LAS

SPN 251T - The Spanish Language Studied Independently Abroad 2

Course Units: 1.0

SPN 252 - Media and Society in the Spanish-Speaking World

Course Units: 1 This course is an intercultural reflection about the role of media in contemporary society throughout the Spanish-speaking world. it focuses on the divers UN-identified global issues as it explores how media impact on our opinions about the challenges shaping our societies, and how our awareness of those dynamics can empower us as agents of change. the course also seeks to raise awareness about the interconnection of media with cultural identity and politics that frame (and complicate) our understanding of global issues. Through readings, videos, discussions, digital projects, and writing assignments, the course fosters the further developments of linguistic (writing, speaking, reading, understanding) and critical skills. All discussions and assignments are in Spanish. **Prerequisite(s):** For students with 4 or more years of Spanish language study, with a score or 5+ 4+ or above on the AP exam or SPN 201. It is also suitable for students who have studies in a Spanish-speaking country or for heritage speakers that can read and write in Spanish. **CC:** GWOL, WAC **ISP:** AMS, LAS

SPN 253 - Colliding Worlds: Cross-Cultural Encounters in Hispanic Literature and Film

Course Units: 1 In this course students examine fictional encounters between people from different backgrounds in the Hispanic world. What happens when a maid and her wealthy employer exchange clothing and roles? When the drivers of a shiny Audi and a rusty clunker inspire road rage in one other? Or when a girl looks into the eyes of an outsider whom she's been complicit in bullying? We analyze stories, plays, and movies from Spanish-speaking countries, situating them in relevant historical and social contexts and examining in them the intersections of class, race, gender, culture, and national identity (JEID). Through readings, films, discussions, creative projects, and writing assignments, students continue developing listening, speaking, reading, and writing abilities in Spanish, as well as skills in critical analysis and intercultural communication (WOL). **Prerequisite(s):** SPN 201, SPN 202 any courses numbered SPN 250-259; AP Spanish score of 4+;or being a heritage speaker.

SPN 254 - Spanish for Heritage Speakers

Course Units: 1 Did you grow up speaking Spanish at home but most of your academic experience has been in English? This class works to strengthen reading and writing skills in Spanish, with a focus on the types of grammar and spelling challenges faced by Heritage Speakers of the language. We will also learn about the cultural, ethnic, and linguistic diversity of the Spanish-speaking world, which, of course, includes the United States. **Prerequisite(s):** SPN 201

SPN 255 - Nonprofits & Storytelling: Spanish for Social Impact

Course Units: 1 You want to work at a nonprofit? Or learn about the power of effective storytelling for business and communication? This course advances your Spanish by expanding your familiarity with NGO's through case studies and first-hand accounts from successful leaders working in Spanish speaking communities. Each week will focus on a different aspect of storytelling, including learning how to effectively reach your audiences, telling stories with data, using images ethically, and leveraging social media platforms. You will advance your Spanish language skills through storytelling projects, translations, readings, videos and podcasts related to the work of social entrepreneurs. This course is highly participatory and student centered, with real life case studies,guest speakers, and course projects. **Prerequisite(s):** SPN 201 or any SPN course 250-299

SPN 256 - Rethinking Latin American Culture

Course Units: 1 This course allows students to delve into Latin American culture through music, dance, and food. In recent years, tourism has emerged as one of the most pivotal industries in the region. However, cultural productions transcend mere commodities marketed to tourists. Throughout this course, students will challenge their preconceptions about Latin America, often shaped by perspectives from the Global North. They will engage in written and academic discussions about how these cultural expressions influence national identities, colonial legacies, and issues related to gender and race across Latin America. **Prerequisite(s):** SPN 201 , SPN 202 , or any course numbered SPN 250-299; AP Spanish score of 4+; and/or being a heritage speaker, or permission of the instructor. **CC:** WAC **ISP:** LAS

SPN 257 - Illness and Medicine in Hispanic Cultures

Course Units: 1 This course explores illness and medicine in the Hispanic world. Students acquire cultural knowledge and vocabulary; carry out research in Spanish; converse with Spanish speakers on campus; learn from guest speakers who use Spanish in health care contexts; and engage with film, literature, art, and media about illness and medicine. Students deepen their understanding of the social determinants of health by examining the intersections of illness with class, race, ethnicity, gender, culture, ability, and age. Students also develop listening, speaking, reading, and writing skills in Spanish.

SPN 295H - Spanish Honors Independent Study 1

Course Units: 0.0

SPN 296H - Spanish Honors Independent Study 2

Course Units: 1.0 **CC:** HUM

SPN 304 - Performing Identities in Spanish Theater

Course Units: 1.0 Representaive works by Spanish playwrights from the 2th and 21 centuries are studied from diverse theoretical approaches to reflect on the performative nature of identitites, and to explore the dynamics of intersectionalities in the realm of cultural representation. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL

SPN 306 - The Remake: Spanish Narrative and New Media

Course Units: 1.0 The contemporary Spanish authors known as "Generacion Nocilla" or the Mutantes are well-connected and savvy users of new media and social networking sites. They maintain their own web pages, they write blogs, produce videos and book trailers, and adopt narrative techniques from digital media. Who are they? And how have they disrupted literary traditions through fiction? Students in this course will critically explore the relationship between identity, technology, and storytelling through theoretical texts on rhizomes, topology, sampling, and remaking. They will then engage in a close reading and analysis of the most influential novel of the time: Nocilla Dream by Agustín Fernandez Mallo. And as a class, students will work collaboratively to write and design a critical-creative remake of the novel with the goal of sending it to the author himself. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUM, HUL, WAC-R

SPN 307 - Melodrama in Latin American Culture

Course Units: 1 This course emphasizes melodrama as an invaluable aesthetic tool for understanding diverse cultural productions in Latin America and among the Latine communities in the United States. Through an exploration of literature, music, and audiovisual materials from the 19th century to the contemporary era, our class delves into how Latin
American and Latine individuals perceive their emotions and navigate the complex world that surrounds them-

exploring themes such as love,identity, sex, marriage, womanhood, and masculinity. **Prerequisite(s):** Any two courses from SPN 250-299 or SPN 203 **CC:** LCC, HUL, JCHF, JWOL, WAC **ISP:** GSWS,LAS

SPN 308 - The Spanish Movida: Explosive Youth Culture of the 1970s and 80s

Course Units: 1.0 The Spanish Movida was an explosive artistic youth cultural movement that emerged during the Spanish transition to democracy in the 1970's and '80s. Although short-lived, it left a lasting mark on Spanish cultural history because Spanish youth used music, art, photography, fashion, film, fanzines, comics, sculpture, architecture, and design to challenge social norms, question assumptions, open new spaces, and give expression to their vision of a new democratic Spain. How and why did the vibrant Movida come about? Who were the major contributors to this cultural explosion? And what was their lasting legacy? Through the step-by-step development of a research project and student-centered conversations and workshops, this course engages with the prolific multi-disciplinary expressions of individual artists and visionaries of the Movida. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS

SPN 311 - Otherness and Citizenship in Contemporary Spanish Theater and Cinema

Course Units: 1.0 An introduction to the study of the dramatic and film genres through the analysis and discussion of contemporary works by Spanish playwrights and filmmaker. Theoretical readings and diverse critical approaches to theater and cinema frame the course around the portrayal of the Other (women, North African and Latin American immigrants, LGBTQ communities, Roma people, and the poor). The analysis of primary texts will center on how the authors/directors weave representations of difference into narratives of nationhood, while engaging in cultural and political debates about citizenship. The course also aims to familiarize students with Spanish visual culture and performance from "la Movida" (immediate post-Franco period) to the new millennium while nurturing the honing of linguistic skills. **Prerequisite(s):** Two 250-299 level courses or permission of the instructor. **CC:** LCCS, HUM, JCAD, JCHF, JLIT, JWOL, WAC **ISP:** FLM

SPN 312T - Immigration in Spanish Cinema

Course Units: 1.0 This course examines the filmic representation of migration in Spain in the context of contemporary debates related to cultural, economic, and political change throughout Europe. The course seeks as well to grasp in an interdisciplinary way immigration's racial, gender, sexual, religious, and other identity locations, as the Spanish nation and its people negotiate--often in paradoxical ways--national and social proximity with demographic realities. The course will analyze miscellaneous printed (newspapers, magazines, literary and economic-political texts) and visual media (digital and not) dealing with the topic of migration in the context of re-settlement, human rights and institutional, cultural, and national beliefs. **CC:** LCCS

SPN 314 - Spain is Different: Current Debates Shaping Spain's Future

Course Units: 1.0 The slogan "Spain is different" was coined by Francisco Franco's dictatorial regime in the 1960s as part of its campaign to advertise Spain to its northern neighbors as an exotic tourist destination characterized by sunny beaches, siestas, flamenco, and bullfights. Today, many Spaniards use the phrase colloquially, not to celebrate their country's uniqueness, but rather to comment on its perceived backwardness in comparison to other industrialized countries. The evolving meaning of this slogan epitomizes Spain's sometimes contradictory efforts to maintain local or national traditions and values while aligning with broader European and global identities. These opposing forces of progress and tradition are at the root of many of the economic, social, and cultural issues dividing public opinion in Spain today. In this course we will examine a few of these current debates through discussion of literature, cinema, and the media. Specifically, the three contentious topics that we will explore are economic globalization and workers' rights, women's rights and the violent backlash against them, and bullfighting and animal rights. **Prerequisite(s):** Any two courses from SPN 250-299 or SPN 203 . **CC:** GCHF, GWOL, WAC **ISP:** GSWS

SPN 318 - Mis/Representations

Course Units: 1 In this course students study, discuss, and understand how some "minority" communities, such as indigenous people from the Amazon and the Andes, Afro-Latin American, Women, and the LGBTQ+ community, have been (mis)represented in Latin American culture from the end of the 19th century to the 21st century. Therefore, we will first engage with the history of the term "minority." After that starting point, students will reflect on the cultures, their realities, and the challenges these communities have faced and continue facing by reading literary texts and viewing some fictional and non-fictional audiovisual materials. At the same time, through our discussion in class, students will draw connections between social problems in the past and current struggles in the U.S. today, such as those highlighted by the Me Too and Black Lives Matter movements, or the fight of native peoples against climate change. Prerequisite: SPN 203 or permission of the instructor **Prerequisite(s):** Two 250-299 level courses, or written permission of instructor. **CC:** HUL, LCC, WAC, JLIT, JWOL, JCHF **ISP:** LAS, GSWS

SPN 319 - Basque Cinema

Course Units: 1 The Basque Country of northern Spain is known for its unique language, lush green landscapes, and antagonistic relationship with the Spanish State. This course explores how films have helped to shape a Basque identity that is distinct from the rest of Spain. From the pioneering 1968 experimental documentary *Ama Lur* (*Tierra Madre*) to the Netflix-produced comedy *Fe de etarras* (2015), Basque cinema has always been deeply tied to the construction (and questioning) of a Basque nation. We will examine how cinematic portrayals of terrorist violence, rural landscapes, giants, and witches articulate different definitions of Basqueness. This course encompasses films from a wide variety of genres, including thriller, art-house film, documentary, drama, comedy, and horror, directed by the most celebrated Basque filmmakers. We will analyze how in these films national, linguistic, and cultural identities intersect with gender, sexuality, class, race, religion, age, and ability. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCC, HUM, WAC

SPN 325 - Staging Conflict: Studies in One-Act Mexican Theater

Course Units: 1.0 This course surveys contemporary one-act Mexican theater focusing on the theatrical devices, trends, and discourses adopted by playwrights to explore conflictive issues in Mexican society and culture: urban violence, generational clashes within the family, sexual diversity, gender roles, consumerism, among others. The course offers an introduction to the study of drama and the analysis of theatrical signs, and it attempts to complement the students' term abroad experience in Mexico by focusing on and contextualizing linguistic and cultural aspects in the texts. Students read texts by Emilio Carballido, Victor Hugo Rascon Banda, Sabina Berman, Hugo Salcedo, among others. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL **ISP:** LAS

SPN 327 - The Nation at Home: Family and Nationhood in Spanish American Theater

Course Units: 1.0 An introduction to the study of the dramatic genre through the analysis and discussion of representative works by Spanish American playwrights (Triana, Wolff, Diaz, Gambaro, Arguelles, Berman, Canales, among others). Theoretical readings and diverse critical approaches to theater frame the course around the representation of family as a microcosm in which narratives of nationhood are contested, revised, and imagined. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL **ISP:** LAS

SPN 328 - Inquiring Latin American Identities: Reading Context, Space and Cultural Artifacts

Course Units: 1.0 This course examines some aspects of the cultures of Latin America to understand how they have impacted national, local, and individual identities. Latin-American cultures are conceived as processes initiated and sustained by the encounter of radically different cultures that framed and continue to shape people's lives. Particularly,

the course explores the impact of gender relations, ethnicity, physical spaces, cultural practices and beliefs on identity. Substantive theoretical readings will complement the course. **Prerequisite(s):** SPN 203 or permission of the instructor. **CC:** WAC **ISP:** GSWS, LAS

SPN 329 - Tradition and Interruption in Latin American Poetry

Course Units: 1.0 Octavio Paz describes modern literature as a "tradition of discontinuity," one that constantly rebels against itself in search of innovation. This course examines Paz's assertion through the study of Spanish American poets, and it aims to introduce students to the genre while surveying major poetic traditions and trends in Spanish America. The course's objectives are centered on strengthening the student's process of language acquisition, developing critical skills, and reinforcing linguistic proficiency and intercultural competence through reading and analysis of poetic texts. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL, HUM, JLIT, JWOL **ISP:** LAS

SPN 330 - Hispanic Women Writers Who Challenged the World

Course Units: 1.0 This course focuses on Latin American and Spanish women's contemporary (from 19th century to the present) short fiction. It centers on the close reading of selected works that deal with some of the most significant formative female experiences and perspectives in contemporary Latin-American societies: maternity, patriarchy, feminicide, among others. The course examines how women's creative expressions explore political and social realities that question the laws and myths surrounding their formation, call critical attention to the foundations and manifestations of a patriarchal order, and offer alternative visions of, or models for, a renewed social life. **Prerequisite(s):** Any two courses from SPN 250-299, or permission of the instructor. **CC:** LCC, HUL, JCHF, JWOL, JLIT, WAC **ISP:** GSWS, LAS

SPN 332 - An Introduction to Afro-Hispanic Literatures and Cultures

Course Units: 1.0 This course exposes students, through selected readings dealing with the black experience in Latin America, to African diaspora literature particular to Spanish- and Portuguese- speaking regions. It bridges various genres and artistic media (narrative, poetry, drama, film, music) in order to provide a general sense - aesthetic, material and cultural, theoretical and cross-temporal - of different manners in which black diasporic expressions have intervened in the re-creation, transformation, and interrogation of Afro identities in Latin America. As such, this course examines these expressions as locutions that enrich our perceptions of social, cultural, economic, religious, gender, and sexual social orders and identities related to the black experience in the hemisphere. **Prerequisite(s):** Two 250-299 courses, or permission of the instructor. **CC:** LCCS, HUL **ISP:** AFR, LAS

SPN 334 - Cartographies of Disasters

Course Units: 1.0 The association between Latin America and catastrophe paints a unidimensional picture that does not correlate with the region's political, social, and geographical reality. With its history of colonialism, natural disasters, civil wars, dictatorships, and economic and political crises, Latin America is repeatedly constructed on the myth of disaster--whether natural or man-made. Disaster, by definition, is a serious disruption that causes great damage and involves human, material, economic and/or environmental loss. As such, it oftentimes leaves no room for discussion even if what constitutes a disaster can be subjective. In this class, we will tease out the problematic association between disaster and Latin America by exploring the effects of a disaster beyond the physical. Through concrete examples and its cultural representations, we will study the ways in which disaster is defined and experienced while analyzing its implications, political and otherwise. By drawing connections between disasters, their representations, and their relationship to politics and history, we will discuss issues including identity, class, power, extraction, and accessibility. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUM, WAC **ISP:** ENS, GSWS, LAS

SPN 336 - Troubling Gender in Contemporary Argentine Literature and Cinema

Course Units: 1.0 This course is an introduction to contemporary Argentine literature and film with a focus on gender dynamics. We will study representative works in various genres (narrative, drama, poetry, and film) within their cultural context. Although there is a brief survey of canonical authors from the first two thirds of the 20th century, the course emphasizes cultural production after 1990. Besides the literary texts and films, we will also discuss substantive readings related to the course topics. Discussions will center on how writers, playwrights, and filmmakers deal with the following topics: the gendering of national identity; the construction of gender and sexual identities; the impact of toxic masculinities; gender notions under repressive regimes; the representation of LGBTQ subjectivities; human trafficking and violence against women. In addition to acquainting students with significant works of Argentine literature and film, the course seeks to strengthen speaking and reading abilities, to sharpen writing and critical skills, and to familiarize students with critical approaches to various literary genres and film. Class discussions and writing assignments are in Spanish. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL, HUM, JLIT, JWOL **ISP:** GSWS, LAS

SPN 340 - Food for Thought

Course Units: 1 Food is life. To satisfy the biological need to eat, people around the globe display diverse cultural practices to produce, distribute, prepare, and consume food. This course explores the cultural impact of food in Latin America from pre-Columbian times to the present as it examines how food is present in political, economic, sociocultural, linguistic, and literary contexts. The course aims to increase students' cultural knowledge related to food and food practices in Latin America and to develop effective interpersonal, interpretive, and presentational communication in Spanish through substantive readings from the field of Food Studies, Social Sciences, Sciences and Humanities. Class conducted in Spanish. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCC, HUM, WAC

SPN 351 - Border Identities

Course Units: 1.0 This course explores Chicano culture through essays, literature, and films that represent current and historical issues of the Mexican-American border. Readings will provide research and data, while literary texts and films will offer varying interpretations and representation of the border culture that will allow you to consider critically the complexities of 20th and 21st century issues that include immigration, working conditions, socio-economic status, the role of women, and identity. The course should also help you improve your proficiency in Spanish at all levels: building vocabulary, speaking, listening, reading, and writing. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL **ISP:** LAS

SPN 352 - Imagining Latinx Identities

Course Units: 1.0 This course is an introduction to contemporary US Latinx literature with a focus on Cuban-Americans, Dominican-Americans, Mexican-Americans/ Chicanxs, and Puerto Ricans. We will study representative works of various genres (narrative, drama, poetry, and film) within their cultural context. Our exploration of US Latinx production seeks to reflect on the plurality and diversity of (self-) representation and the various ways in which Latinx authors and artists imagine and construct their identities and communities in the United States. In addition to acquainting students with significant works of US Latinx literature, the course seeks to strengthen reading ability and sharpening writing and critical skills. Class discussions and writing assignments are in Spanish. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL **ISP:** LAS

SPN 360 - Spanish Communication: Speaking and Writing in Contemporary Settings

Course Units: 1.0 The goal of this course is to build oral proficiency in Spanish at advanced levels. Oral communication will be supported by readings and intensive writing in the target language. Acquisition of linguistically and culturally appropriate oral skills will allow students to communicate successfully in academic and professional settings as well as daily life. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUM

SPN 375 - Reality Interrupted in Hispanic Narratives

Course Units: 1.0 This course explores the disruption of reality in narratives from the Hispanic world (Spain, Latin America, and US Latinx communities), surveying the myriad representations of reality through the subconscious, the magical real, and the unreal or fantastic. In addition to acquainting students with major literary trends affecting the depiction or construction of reality in Hispanic literature, the course seeks to strengthen speaking and reading abilities, to sharpen writing and critical skills, and to familiarize students with critical approaches to various literary genres and film. Class discussions and writing assignments are in Spanish. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL **ISP:** LAS

SPN 376 - Down to Earth: Cross-Cultural Explorations of the Hispanic World

Course Units: 1.0 This course furthers the development of cultural competency while maximizing language skills and providing the foundation for further studies in language, literature, and culture. "Down to Earth" broadens students' knowledge of the Spanish-speaking world by focusing on shared past and present issues affecting people living in similar geographic regions. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUM **ISP:** LAS

SPN 380 - What's Love Got to Do with It: Gender and Nation in Hispanic and US Latino Literatures

Course Units: 1.0 An introduction to the study of literary genres thematically anchored in the intersection of gender dynamics, national politics, and the construction of identity (sexual, cultural, national). Students will read narrative, poetry, and drama from Spain, Spanish- America, and U.S. Latino communities. Theoretical readings and diverse critical approaches to literature frame the course around the portrayal of romantic/sexual relationships that acquire broader dimensions when scrutinized from the perspective of gender and national politics. How are gender and sexual identities inscribed in national identity? How cultural artifacts project and reflect the gendered body of the nation? **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL **ISP:** GSWS, LAS

SPN 381 - Hauntings in Hispanic Fiction

Course Units: 1.0 Ghost stories evoke both fear and delight in readers, listeners, or viewers. But beyond entertaining us, tales of haunting can reveal memories, traumas, and social figures that an individual or society has repressed or maybe just never noticed before. For example, a ghostly apparition may serve to remind a nation of historical violence that it has sought to forget. Or it may represent a silenced social figure clamoring to be heard from the margins. In this course we will explore haunting as a theoretical concept and storytelling device. To do so we will analyze a variety of ghostly narratives - both literary and cinematic - from the Hispanic world. As we summon these fictional phantoms and work to interpret their messages, we will situate each text within its particular cultural, sociopolitical, and intellectual contexts. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** HUM, HUL, LCCS, WAC **ISP:** GSWS, LAS

SPN 401 - XX and XXI Century Latin American Narrative

Course Units: 1.0 This course examines a selection of some of the most representative but also less canonical manifestations of the Latin American novel, in the context of cultural and national formations that marked Latin

American history. By highlighting the particular developments and contradictions explored in these works, students will reflect upon political movements, artistic trends, and intellectual debates that have shaped Latin America. **Prerequisite(s):** Two 300-level courses. **CC:** LCCS, HUL **ISP:** LAS

SPN 405 - Lost and Found in Translation

Course Units: 1.0 SPN 405 provides advanced students of Spanish with foundational knowledge on the field of Translation and Interpretation Studies. The course hones advanced language skills, broadens cultural knowledge, and sharpens critical thinking skills as it examines translation from an interdisciplinary perspective. Class work will include translation of literary work and real-life translation for non-governmental or not-for-profit organizations. **CC:** WAC, HUM, LCC

SPN 406 - Film of the Mexican American Border

Course Units: 1.0 Through the study of 9 films, students will gain an understanding of cinematic techniques and the ways in which the directors of these films use them to convey differing perspectives of the Mexican-American border, with emphasis on the Mexican side. The films will be presented thematically in reference to the border as the perceived locus of perversion and violence, emigration/immigration, and identity. Readings for the course will come from texts on film, and from book chapters and articles. By the end of the term students will have a better understanding of the history and social dynamics of the Mexican- American border. They will also better understand how to "read" film through different theoretical approaches. They will also be able to discuss and write analytically about what a director does and why. **CC:** LCCS, HUM **ISP:** AMS, LAS

SPN 407 - Cultures in Contact (and Conflict) in Contemporary Spain

Course Units: 1.0 What is a nation? We will develop complex answers to this question as we explore the case of Spain, a plurinational state where the definition of nation is under constant debate. To do so, we will examine narrative, essay, theater, film, political documents, news, and television shows from culturally and linguistically distinct regions of Spain. We will analyze these texts through the lenses of various theories of nationalism. **Prerequisite(s):** Take any two 300-level Spanish courses. **CC:** LCCS, HUL

SPN 408 - Digital Storytelling Lab

Course Units: 1.0 In this highly interactive, student-centered and exploratory course, students will engage in a three-step learning process that combines theory, analysis, and production of electronic literature and digital storytelling from the Hispanic world. The class will explore the theory and meaning behind microfiction, hypertext and hypermedia, and through hands-on "labs" students will travel through digital space and analyze concrete examples of electronic literature. Both theory and analysis will inform the creation of digital stories on two different digital storytelling platforms. **Prerequisite(s):** Two 300-level SPN courses. **CC:** LCCS, HUL **ISP:** LAS

SPN 409 - Rebels with a Cause: Spanish Youth Culture and Protest

Course Units: 1.0 This course examines fiction, film, visual arts and social media of Spanish writers and directors from 1975 until today. Students consider critical perspectives on the development and expression of youth from the Spanish Movida (1975-85), Generation X (1990-2000), the Mutantes (2000-2010) to the M-15 Movement. What are the socio-historical and cultural developments that have influenced these groups of writers? How have they reacted and represented their social realities? How did they define their identities, question and rebel against society? To what degree did North American popular and commercial culture and developments in media technologies infuse their storytelling practices on thematic and technical levels? Students in this course will read short stories and extracts from novels, magazines, newspaper articles, and blogs, and will analyze films and other multi-media products. **Prerequisite(s):** Two 300-level courses. **CC:** LCCS, HUM

SPN 412 - Social Innovations in Spain

Course Units: 1 In this course students will explore what it means to be a changemaker and how social innovators in Spain are transforming their local communities in support of employment, education, health, human rights, the environment, and economic and urban development. Class learning will apply theories rooted in collaboration, civic engagement, creativity and play. Students will listen to podcasts by Spanish social entrepreneurs, analyze the work of specific innovators, and read analytical articles rooted in the field of changemaking and social entrepreneurship. Through a project of their choice, students will collaborate in the building of a platform added to by each new group of students taking this course. **Prerequisite(s):** Two 300-level Spanish courses, or with permission from instructor. **CC:** LCCS, GWOL, WAC-R, GCHF, GSPE, HUM

SPN 415 - What Remains: Waste in Latin American Cinema, Literature, Media, and Art

Course Units: 1.0 This course examines the presence and impact of trash, disposed objects and life, and landfills/wastelands in the context of expiry, renewal, and globalization in Latin America. Borrowing from philosophy and urban sociology and anthropology, Latin American, cultural, media and cinema, and environmental studies, the course teases out the aesthetic, political, and economic aspects of "trash" as an intricate stockpile of modern, industrial, digital, and postindustrial traces of discarded and remnant history as well as a multifaceted symbolic index with particular trajectories and manifestations in Latin America contexts. The course will revisit cultish films like Amores Perros (Gonzalez Inarritu, 2000) and lesser known films like La sociedad del semaforo (Mendoza, 2010) and Buscando a Miguel (Fisher, 2006); examine Photography work by Manuel Alvarez Bravo, Miguel Río Branco, and Enrique Meinitides and conceptual art by Teresa Margolles and Doris Salcedo, among others; explore documentary and environmental work looking at waste, neoliberalism, and recovered and precarious life such as Sequia (Sanchez Macias, 2009), Cartoneros (Livon-Grosman, 2006),Lixo extraordinario (Walker, Jardim, Harly 2010), El tren blanco (Garcia, Perez Gimenez y Garcia, 2003), and Yasuni: dos segundos de vida (Leonardo Wild, 2010); and finally, analyze select literary and alternative initiatives related to "basura" (Ibargoyen, Bolanos, Restrepo, editorial Eloisa Cartonera, Spregelburd, among others). **Prerequisite(s):** Take two SPN 300 level courses. **CC:** LCCS, HUM **ISP:** FLM

SPN 417 - Death and Revenge in the Southern Cone

Course Units: 1.0 This course examines the dictatorship in Argentina, Chile, and Uruguay. Through analysis of cultural products including narrative, theater, and film, students will reflect on themes and questions such as the effects of torture and terrorism on society, the constraints of censorship, and revenge. We will read texts by Marta Traba, Luisa Valenzuela, Diana Raznovich, Eduardo Pavlovsky, Ariel Dorfman, among others. Films will include Camila and Death and the Maiden, among others. **Prerequisite(s):** Two 300-level courses. **CC:** LCCS, HUL **ISP:** GSWS, LAS

SPN 418 - Readings on Contemporary Mexican Theater

Course Units: 1.0 The course explores Mexican theater from the 1950's to the present focusing on playwrights that seek to stage and imagine the nation and their communities either contesting or legitimizing hegemonic narratives of cultural uniformity, normative gender and sexual roles, and a cohesive political state. We will analyze dramatic texts by Luisa Josefina Hernandez, Emilio Carballido, Hugo Arguelles, Leonor Azcarate, Víctor Hugo Rascon Banda, Jesus Gonzalez Davila, Sabina Berman, Hugo Salcedo, among others. **Prerequisite(s):** Two 300-level courses. **CC:** LCCS, HUL **ISP:** LAS

SPN 424 - Imaginarios urbanos: Interventions in the Latin American City

Course Units: 1 This course explores Latin American cities as sites where artists engage with public space in order to both call attention to injustices and experiment with practices of modifying urban life. These interventions respond to

the conditions that shape each city to reveal the power relations at work. Students will examine and analyze efforts to reimagine a more democratic city as presented in short stories, stencil, graffiti, installations, escraches, photography, street theater, and teatro de la invasión. **Prerequisite(s):** Two 300-level SPN courses. **CC:** HUL, HUM, LCCS, WS, GCAD, GLIT, GWOL **ISP:** GSWS, LAS

SPN 425 - Call for Social Change

Course Units: 1 In this unique upper level Spanish class, you will write a personal narrative that calls for social change; you will then collaborate in teams to edit, typeface and design a real paperback book that will be sold on Amazon, with all proceeds donated to COCOA House. You will connect your own passions and interests with research of other Hispanic changemakers in the US and the Spanish speaking world, in addition to watching documentaries and exploring case studies of Spanish-speaking changemakers. **CC:** WAC, JWOL

SPN 431 - Latin America in Colonial Times

Course Units: 1.0 This course examines European, indigenous, mestizo and African chronicles of the encounter between Europeans, slaves and native Americans that started in the fifteenth century with the emergence of the "New World." By looking closely at the colonization and subsequent reconfiguration of communities and their cultures, the course analyzes the chronicle and representation of this trans-Atlantic collision and exchange from a historiographic and literary perspective. We will read travel journals, poetry, drama, histories, ethnographies, and other types of textual/visual production such as films and codices, a diverse production that bore witness to the many ways in which the various peoples of and in the Americas documented, perceived, and imagined the old and the new, themselves and others. **Prerequisite(s):** Two 300-level courses. **CC:** LCCS, HUL **ISP:** AFR, LAS

SPN 432 - Islands Adrift: Race, Politics, and Diasporas in the Hispanic Caribbean

Course Units: 1.0 Introduction to the literatures and cultures of Cuba, Dominican Republic, and Puerto Rico centering on how the region continues to approach its development tempered by an array of colonial legacies-from the slave plantation system to globalization-that impact on social, political, economic, and cultural dynamics. Diverse critical approaches will frame the analysis of literary, visual, and musical texts by Luis Pales Matos, Nicolas Guillen, Pedro Mir, Heberto Padilla, Tomas Gutierrez Alea, Aida Cartagena Portalatin, Celia Cruz, Ana Lydia Vega, Juan Luis Guerra, Reinaldo Arenas, Mayra Montero, among others. **Prerequisite(s):** Two 300-level courses. **CC:** LCCS, HUL, HUM, WAC, JLIT, JWOL, WAC-R **ISP:** AFR, LAS

SPN 433 - Latin American Colonial Crossroads at the Movies

Course Units: 1.0 This course explores critically filmic approaches to colonial Latin American literature and history. Its main objectives are to analyze films preoccupied with historical events and life in colonial times, to engage the filmic representation of the cultural, political, and religious encounters and tensions informing our desire to revisit contact among Amerindians, African slaves and Europeans, and to familiarize students with debates pertaining to reconstructing the colonial past for contemporary consumption. **Prerequisite(s):** Two 300-level courses. **CC:** LCCS, HUM **ISP:** AFR, FLM, LAS

SPN 473 - Spain on Screen

Course Units: 1.0 In this course we will examine the works of some of Spain's most prominent filmmakers, focusing especially on how they portray traditional definitions of "Spanishness," represent Spain's regional and ethnic diversity, grapple with evolving social norms, and engage with European and global filmmaking traditions and markets. You will become familiar with the conventions of a variety of genres, from arthouse to romantic comedy. Throughout the course you will gain analytical skills and technical vocabulary that will enable you to enjoy a deeper understanding of cinema and discuss it fluently in Spanish. **Prerequisite(s):** Two 300-level courses. **CC:** LCC, HUM, WAC/S

SPN 489 - Spanish Honors Senior Thesis

Course Units: 1.0 For seniors who qualify for departmental honors. Honors is only offered in the spring term. Eligible students wil be contacted in the Winter term. The thesis consists of an extensive research and writing project in Spanish, whose structure and topic is determined by the directing faculty member. **Prerequisite(s):** A candidate for honors shall have an index in Departmental courses of not less than 3.5 and an overall cumulative index of not less than 3.3. The candidate shall have achieved a grade of "A" in three courses in the department, with at least one at the 300-level or higher. Majors shall have achieved a grade of at least "A-" in two 400-level courses (not including 48). Interdepartmental majors shall have achieved a grade of at least "A-" in no fewer than three courses at the 300-level or higher, with at least one 40-level course prior to taking SPN 489. **CC:** LCCS, WS

SPN 490 - Spanish Independent Study 1

Course Units: 1.0 Individual directed readings in the field of Spanish or Spanish-American literature. **Prerequisite(s):** At least one course in Spanish at the 400-level and permission of the instructor.

SPN 491 - Spanish Independent Study 2

Course Units: 1.0 Individual directed readings in the field of Spanish or Spanish-American literature. **Prerequisite(s):** At least one course in Spanish at the 400-level and permission of the instructor.

SPN 492 - Spanish Independent Study 3

Course Units: 1.0 Individual directed readings in the field of Spanish or Spanish-American literature. **Prerequisite(s):** At least one course in Spanish at the 400-level and permission of the instructor.

Statistics

STA 064 - Statistical Thinking

Course Units: 1.0 Seeks to provide the conceptual foundation and analytical skills required to understand a complex, data-rich and uncertain world, and to navigate through the daily bombardment of data from all sides. Significant emphasis is given to understanding the difficulties in acquiring high-quality data, before moving on to graphical and statistical analysis of data, in order to draw actionable conclusions. **Prereq/Corequisite(s):** Not open to students who have passed STA 104, ECO 243, MER 301, PSY 200 or a college calculus course. **CC:** QMR

STA 104 - Introduction to Statistics

Course Units: 1.0 This course is intended to provide the conceptual foundations, and also analytical skills, for students to be able to quantify uncertainty, and further, to make rational decisions in the face of uncertainty. It addresses collection of high-quality data, basic statistical analysis of such data, including use of computer software, and drawing actionable conclusions from analyses. These conclusions include understanding the limitations of statistical analyses. The integration of subject matter knowledge with data analysis within the sequential cycle of scientific inquiry will be emphasized. This course is also intended to prepare students for more advanced statistics courses, such as those in experimental design or regression analysis. **Prereq/Corequisite(s):** This course is designed for first year students and sophomores, and preference will be given to such students in accepting petitions. Not open to students who have passed STA 064, STA 164, STA 264, MTH 115 , MER 301, IMP 120 , ECO 243 or PSY 200 **CC:** QMR, JDQR **ISP:** ENS

STA 128 - Probability

Course Units: 1.0 Probability theory and applications. This course is a survey of the basic concepts of probability theory including permutations and combinations, conditional probability, Bayes' formula, independence, discrete and continuous random variables, expectation and variance, the Central Limit Theorem, and selected topics. **Cross-Listed:** MTH 128 **Prerequisite(s):** MTH 102 , MTH 112, or MTH 113 . **NOTE:** Not open to students who have passed or are taking MTH 199 . Students who intend to minor in Mathematics or Financial and Actuarial Mathematics, or major in Mathematics should take MTH 228 /STA 228 as credit is not normally given for both MTH 128 /STA 128 and MTH 228 /STA 228.

STA 164 - Strategies of Experimentation: Statistical Design and Analysis of Experiments

Course Units: 1.0 Experimentation is at the heart of the scientific method, both in the physical and social sciences. Not only do experiments validate or disprove existing hypotheses, but often unexpected results lead to the development of new hypotheses and new theoretical understanding. This course will focus on strategies to accelerate the scientific method when experimenting with multiple variables. Specific topics include design options, such as simple comparative experiments, factorials and fractional factorials, and response surface designs, as well as analysis methods such as graphical methods, analysis of variance, and regression models. **Prerequisite(s):** One of STA 104 ,STA 128 /MTH 128 , STA 264 , STA228/MTH 228 , MER 301, ECO 243, PSY 200 or permission from the Chair. **CC:** QMR **ISP:** ENS

STA 228 - Probability Theory

Course Units: 1 An introduction to the theory of probability. Discrete and continuous random variables. Jointly distributed random variables, sums of random variables and properties of Expectation. Moment generating functions, inequalities, and Limit Theorems. Focus will be on both the theoretical aspects of probability and problem solving. Discussion of some of the probability problems encountered in actuarial, financial, and scientific fields. **Cross-Listed:** MTH 228 **Prerequisite(s):** MTH 197 or MTH 199 and MTH 117 (MTH 117 can be taken concurrently), or permission from the Chair **Note:** Not open to students who have passed MTH 128 /STA 128 .

STA 264 - Regression Analysis

Course Units: 1.0 Regression analysis is one of the most important and influential methods in statistics, finding application in virtually all disciplines, from business to healthcare to sociology to the hard sciences. This course will cover both the science of regression analysis - its underlying mathematical theory, as well as the art of its practical application. The course project will involve development of a regression model to fit a real data set. Lectures will be given primarily in matrix notation, i.e., using linear algebra. While the course will not be all-encompassing in itself due to time constraints, it would be good preparation for more advanced modeling courses involving data mining, machine learning, "Big Data", and so on. Prior understanding of statistical concepts is assumed **Prerequisite(s):** MTH 115 and one of STA 104 , ECO 243, STA 164 , PSY 200, MER 301 or permission from the Chair. **ISP:** ENS

STA 295H - Statistics Honors Independent Project 1

Course Units: 0.0

STA 296H - Statistics Honors Independent Project 2

Course Units: 1.0

STA 329 - Mathematical Statistics

Course Units: 1 An exploration of the mathematics underlying commonly applied statistical methods, such as hypothesis testing, confidence intervals, experimental design, and regression. Covers the key concepts of the theory of: point estimation, maximum likelihood estimates, sampling, hypothesis testing, power of a test, confidence intervals, linear regression, experimental design and analysis of variance, goodness of fit, and nonparametric tests. **Cross-Listed:** MTH 329 **Prerequisite(s):** MTH 228

STA 364 - Big Data Analytics

Course Units: 1.0 This course focuses on the analysis of large data sets in diverse application areas using statistical programming languages. Students will develop an understanding of the role of machine learning methods within the context of the scientific method. They will analyze real data sets using downloadable statistical programming packages, including on a course project of their own choosing. This analysis will include exploratory data analysis, visualization, and use of more sophisticated classification and predictive algorithms including nearest neighbor, naïve Bayes, classification and regression trees (CART), neural networks, and others. During the course we will pay special attention to validating models using the "train and test" regimen, as well as through cross validation and bootstrapping. In the process of studying the machine learning methods themselves, students will develop an ability to manipulate big data to accomplish the previous objectives. This includes downloading, merging, appending and reshaping data, and creating new variables. Successful completion of this course would be advantageous for those considering graduate study or employment in the areas of statistics, data science, machine learning, computer science, econometrics, or related disciplines. **Prerequisite(s):** STA 264 or ECO 243 or permission from the Chair. **CC:** JDQR

STA 490 - Statistics Independent Study

Course Units: 1.0 Independent study in a particular area of statistics under the supervision of a faculty member. **Note:** Subject to faculty availability and Chair approval.

Degrees Offered

Degree Program	Degrees	HEGIS
Africana Studies	B.A.	0305
American Studies	B.A.	0313
Anthropology	B.A.	2202
Asian Studies	B.A.	0301
Astronomy	B.A.	1911
Biochemistry	B.S.	0414
Biomedical Engineering	B.S.	0905
Biology	B.S.	0401
Chemistry	B.S.	1905
Chinese Studies	B.A.	1107
Civil Engineering	B.S.	0908
Classics	B.A.	1504

Computer Engineering	B.S.	0909
Computer Science	B.S.	0701
Economics	B.A.	2204
Electrical Engineering	B.S.	0909
English	B.A.	1501
Environmental Engineering	B.S.	0922
Environmental Policy	B.A.	1999.10
Environmental Science	B.S.	1999.20
French and Francophone Studies	B.A.	1102
Gender, Sexuality, and Women's Studies	B.A.	4903
Geosciences	B.S.	1914
German Studies	B.A.	1103
History	B.A.	2205
Humanities	B.A.	4903
Interdepartmental Program	B.A., B.S	4901
Latin American and Caribbean Studies	B.A.	0308
Managerial Economics	B.A.	0517
Mathematics	B.S.	1701
Mechanical Engineering	B.S.	0910
Modern Languages	B.A.	1101
Music	B.A.	1005
Neuroscience	B.S.	0425
Philosophy	B.A.	1509
Physics	B.S.	1902
Political Science	B.A.	2207
Psychology	B.S.	2001
Religious Studies	B.A.	1510
Russian and East European Studies	B.A.	0307
Science	B.S.	4902

Science, Medicine and Technology in Culture	B.A.	4902
Social Science	B.A.	2201
Sociology	B.A.	2208
Spanish and Hispanic Studies	B.A.	1105
Theater	B.A.	1007
Visual Arts	B.A.	1001
Joint Programs in Conjunction with Other Institutions		
Eight-Year Leadership in Medicine	B.S.	0499

- Health Management or Clinical Leadership in Health Care Management (with Albany Medical College and Clarkson University - Capital Region Campus)

Majors, Minors, and Other Programs

Departments and interdisciplinary programs are described below in alphabetical order. Please refer to the detailed sections on each area of study for more information. Requirements to fulfill a major or minor appear within each program or area of study.

3+3 Accelerated Law Program

Advisor: Associate Professor B. Hays (Political Science)

The Union College-Albany Law School combined program allows students to complete a full Union B.S. or B.A. degree in three years and subsequently progress to Albany Law School. The program provides opportunities to earn undergraduate credit through law-related internships and participate as undergraduates in Albany Law School activities designed for combined degree program students. Students in this program, who will be known as Law Scholars, will be admitted to Albany Law School early (upon admission to Union) with entry to law school contingent on their undergraduate GPA, but not their LSAT score. Students are still required to take the LSAT prior to matriculation at Albany Law School, with high scores providing access to scholarship opportunities.

3+3 Accelerated Law Program

Notes:

• Applications accepted for first-year fall term enrollment at Union College with a cap of 20 students at any one time at Union.

• SAT or ACT scores will be required as part of the application.

• Students accepted to the program will be offered a spot in the Law Scholars Program, which like the Union Scholars program, includes the ability to take a fourth course free of charge each term and to take Scholars FYP and SRS courses. Unlike the Union Scholars, the Law Scholars will graduate from Union with 36 credits rather than 38.

• Students will be encouraged to earn their Union B.A. or B.S. in 3 years, through a combination of their coursework over this time, any advanced credit from their high school experience, the use of the aforementioned fourth courses, and summer courses (up to three pre-approved courses can be taken at colleges other than Union.) Students will stay in the program by maintaining a 3.4 GPA. Students have the option of spending four years at Union, should they choose to do so.

• Students will be encouraged to contact Albany Law School to be assisted with obtaining at least one summer internship after their first, second or third year. Academic credit will be an option for the internship(s) with an additional fee.

• Students will begin their law degree coursework as soon as they have completed their Union College degree requirements.

• Students will take their LSAT during their third year at Union. Continuing to Albany Law School will not be contingent on the score, though a student's merit scholarship to Albany Law School will be contingent on academic criteria, which includes the LSAT score.

Africana Studies

Director: Cheik M. Ndiaye (Modern Languages)
Faculty: K. Aslakson (History), D. Hill Butler (Sociology), L. Cox (Visual Arts), W. Garcia (Modern Languaes), A. Ghaly (Engineering), R. Hislope (Political Science), S. Kuersteiner (History), K. Lynes (English), L. Marso (Political Science), A. Morris (History), C. Ndiaye (Modern Languages), T. Olsen (Music), B. Peterson (History), K. Raeburn (Economics), R. Reed (Library), K. Scheiter (Philosophy), J. Witsoe (Anthropology)

Africana Studies offers a full major, an interdepartmental major and a minor involving the study of interdisciplinary connections of the history, culture, intellectual heritage, and political and social contexts of people of African descent. The program features a variety of approaches to intellectual, creative, and practical interests, and draws upon the arts, humanities, and social and behavioral sciences.

Africana Studies (ID) B.A.

Requirements for the Interdepartmental Major:

Eight courses including:

AFR 100 - Introduction to Africana Studies

Course Units: 1.0 An interdisciplinary introduction to the field of Africana Studies. This course will examine the issues and perspectives-social, economic, political, historical, and cultural-of the peoples of Africa and the African diaspora. **CC:** LCC **ISP:** AIS, AMS, LAS

Two-term thesis which includes Africana Studies in conjunction with other departmental major:

IDM 498 - Interdepartmental Senior Thesis 1

Course Units: 0.0 For interdepartmental majors who are pursuing a two term senior thesis. The first half is graded Pass or Fail. **CC:** WS

IDM 499 - Interdepartmental Senior Thesis 2

Course Units: 2.0 Second half of a two term senior thesis. **Prerequisite(s):** IDM 498 **CC:** WS

Six courses selected from the Africana Studies Associated Courses list from crossing at least two of the college's three divisions

Two-term senior thesis that examines issues prominent in Africana Studies.

Africana Studies Approved Courses

For the Major, Minor, and ID Major, completing AFR 100 before taking junior-level classes is strongly recommended, although the introductory course can be completed up to senior year in consultation with and after formal approval from the program director.

Division 1: Arts & Humanities

Art History

AAH 163 - Latin American and Caribbean Art of the 19th and 20th Century

Course Units: 1.0 An examination of the major aspects of Latin American and Caribbean art from the early 19th through the 20th century. Emphasis is placed on integrating the social and political background of the various cultures with the key artists, artistic issues and movements of particular countries and periods. Topics to be covered include: the influence of the major art academies in Mexico, Brazil and Ecuador, the strong links between art and politics, indigeneity, woman as artist and subject, and the ongoing dialogue with the art of Europe and later the United States. **CC:** LCC, HUM, JCAD, JCHF **ISP:** AFR, LAS

AAH 360 - Seminar: Visual Culture, Race and Gender

Course Units: 1.0 A lecture and discussion-based course concerned with how constructions of race and sexual differentiation are played out across art history and visual culture, focusing on the visual arts of Western Europe and the United States. The first half of the course investigates the constructs of gender and race from antiquity to the middle of the 20th century as expressed in art and visual culture. The second half of the course is a close study of female artists of color living and working in the United States, grouped as African- American, Latina/Chicana, Asian and Middle Eastern and Multi-ethnic. **CC:** LCC, HUM, JCAD, JCHF **ISP:** AFR, AMS, GSWS, LAS

Classics

CLS 110 - Ancient Egypt: History and Religion

Course Units: 1.0 This course offers an overview of the history of ancient Egypt from the rise of the state under the first pharaohs (3200 BC) to its incorporation into the Hellenistic and Roman empires. Attention is given to political and social organization, foreign relations, and religion based on a study of relevant ancient texts (in translation) and archaeological evidence. **CC:** LCC, HUM **ISP:** AFR, REL

English

EGL 233 - 18-19th Century Early Literature of African Diaspora

Course Units: 1.0 This introductory survey course will trace African American movement towards literary and aesthetic mastery beginning with what Henry Louis Gates calls "oral writing." Readings begin with the first known written poems and progress from slave narratives and autobiography to essays and fiction. Authors include Phillis Wheatley, Harriet Jacobs, Frances Ellen Watkins Harper, Solomon Northup, Charles Chesnutt, W.E.B. Du Bois, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AFR, AMS, GSWS

EGL 237 - Reclamation & Renaissance: Black Literary Arts 1900 to 1960, "Dark Like Me - That is my Dream!"

Course Units: 1.0 In this course we will read literatures of African diaspora from the United States and from the English-speaking African Diaspora more broadly speaking, written in the early to mid- 20th century. This course is deliberately using the adjective Black instead of African American to highlight our awareness that the literature of the early 20th century is part of a Pan-African movement. Threads we will follow include: issues of identity (being American; being Black; racial and social passing); miscegenation; claims to culture through literature; political and social change through literature (is it possible?); self-representation and activism through literary arts; rise of pride in being part of African diaspora; gender roles in literary and social contexts. Questions we will raise and explore in the course of the term include: What is the relationship between aesthetic production and political action? What are the gendered aspects of the expressions of the writers and artists? How are "folk" forms incorporated into "literary" forms? How does self-representation operate in the reclamation of a sense of self? We will engage with the complexities of cultural diversities within the African diaspora while we contemplate the traditions we follow. We will begin, as the title of the course suggests, around the turn of the 20th century, when Du Bois writes that the "problem of the twentieth century is the problem of the color line" (Souls of Black Folk 45). We will move through what some called the Harlem Renaissance, during which time writers such as Langston Hughes celebrated being Black in a reclamation of the self: "Dark like me-That is my dream!" (Selected Poems 14). We will explore the literature of the pre- and post- WWII era, ending the term with what was known as the Black Arts Movement. The goal, in terms of content, is to provide you with a broad sampling of literature of the African Diaspora literature of the early 20th century, with a particular focus on literature (prose in the form of essays, short stories, novels; poetry; plays) generated from the United States while also reaching toward its more global pan-Africanist roots. I hope you will follow your interests and curiosities, after the course is over, to explore this literature further. (Also counts for Africana and American Studies). **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JLIT **ISP:** AFR, AMS

EGL 248 - Introduction to Black Poetry

Course Units: 1.0 We will explore the development of African-American poetic voices in North America. We will look at poems and poets as they constitute a hybrid and composite tradition. We will read poetry in anthologies; we will also read several full books by individual authors, and will listen to performance poetry on CD and DVD. A partial list of poets we will read includes Wheatley, Harper, Dunbar, Hughes, McKay, Helene Johnson, Brooks, Baraka, Clifton, Sanchez, Cortez, Morris, Mullen, Brathwaite, Komunyakaa, Francis, Dungy, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AFR, AMS

EGL 266 - Black Women Writers

Course Units: 1.0 This course provides an introduction to the major themes and concerns of twentieth- and twenty-first century African American women writers. We begin in the 18th century and move quickly to the 20th and 21st. We will examine the ways in which black womanhood is characterized through intersecting categories of race, gender, class, sexuality, and empire. We will explore how selected authors wrestle with stereotypical images of African American women, examine the connections between black womanhood, community, and empire, and discuss the

benefits and limitations of the concept of "black women's writing." Possible writers include Frances Harper, Maria Stewart, Anne Spencer, Zora Neale Hurston, Gwendolyn Brooks, Toni Morrison, Audre Lorde, Gloria Naylor, Octavia Butler, and others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM **ISP:** AFR, AMS, GSW

Note: A student must take EGL 100; EGL 101; or EGL 102 as a prerequisite for any 200-level course in the English Department. A student must take two 200-level courses before enrolling in a 300-level course and four 200-level courses before enrolling in a 400-level course.

Note: Junior and Senior Seminars: Not listed here because topics vary year to year, but in order to earn Africana Studies credit, the topic must cover Africana topics, such as Black Nature Writing, writers of the Harlem Renaissance, and others.

Modern Languages and Literatures

FRN 304 - Studies in the French Caribbean

Course Units: 1.0 Exploration of how French colonialism has informed artistic expression in the French Antilles. Taking Martinique as a point of departure, we will examine how colonial and post-colonial subjects represent and are represented through literary, theatrical, and musical productions. Themes to include notions of negritude, creolite, and bilingualism, as well as issues of class and gender. **CC:** HUL, LCCF, HUM **ISP:** AFR, LAS

FRN 307 - Negritude Movement: Point of Departure in Black African and Afro-Caribbean Literatures in French

Course Units: 1.0 This study of the Black diaspora in French in the 1930s examines a variety of political and literary strategies developed in reaction to French colonial policies before the era of official independences. We consider authors such as Cesaire, Damas, Senghor, Fanon, and Sartre to better understand how these writers represent influences on the literatures of decolonization and post-colonial identity. **Prerequisite(s):** FRN 201 , any 300-level or permission of instructor. **CC:** LCCF, HUM **ISP:** AFR, LAS

FRN 430 - West African Oral Literature

Course Units: 1.0 West-African oral genres with a focus on tales and epics in their form and ideologies. Through a study of the oral literature of the region, we will explore the socio-cultural structures of ancient West Africa, their collapse through religious and colonial implications, and their vestiges in today's Africa. **Cross-Listed:** MLT 213 **CC:** HUL, LCCF, HUM **ISP:** AFR

FRN 431 - Voices of Francophone Literature from French-Speaking Countries and Territories other than France

Course Units: 1.0 The ways contemporary writers from former French colonies in West and North Africa and from the French-speaking Caribbean stress local, social, political, religious, and gender matters in their novels and short-stories. We also examine these writers' particular use of the French language according to local meanings and other strategies they develop to redefine post-colonial societies. Among selected writers we have Calixthe Beyala, Mariama Ba, Assia Djebar, Rachid Minouni, Patrick Chamoiseau, and Maryse Conde. **CC:** HUL, LCCF, HUM **ISP:** AFR

MLT 213 - West African Oral Literature

Course Units: 1.0 West-African oral genres with a focus on tales and epics in their form and ideologies. Through a study of the oral literature of the region, we will explore the socio-cultural structures of ancient West Africa, their

collapse through religious and colonial implications, and their vestiges in today's Africa. **Cross-Listed:** FRN 430 **CC:** HUL, LCC **ISP:** AFR

MLT 284 - Popular Religion and Politics in Latin America

Course Units: 1.0 In this course we will examine the connection between politics and popular religions in Latin America, taking a critical view of several of their manifestations without losing track of the language and "sciences" historically used to describe them. We will engage biblical, anthropological, videographic, ethnohistorical and cultural theory texts as well as oral histories and collective memories. The final goal is to tease out those ideas that have traditionally defined the terms in which we understand and explain the "popular" in religious behavior; to understand better the conflicted relationship between "popular" cultural and institutional spaces; and finally to understand why the evolution of popular religions in Latin America cannot be examined without also taking into account their political economy. **CC:** HUM, LCC **ISP:** AFR, LAS, REL

SPN 332 - An Introduction to Afro-Hispanic Literatures and Cultures

Course Units: 1.0 This course exposes students, through selected readings dealing with the black experience in Latin America, to African diaspora literature particular to Spanish- and Portuguese- speaking regions. It bridges various genres and artistic media (narrative, poetry, drama, film, music) in order to provide a general sense - aesthetic, material and cultural, theoretical and cross-temporal - of different manners in which black diasporic expressions have intervened in the re-creation, transformation, and interrogation of Afro identities in Latin America. As such, this course examines these expressions as locutions that enrich our perceptions of social, cultural, economic, religious, gender, and sexual social orders and identities related to the black experience in the hemisphere. **Prerequisite(s):** Two 250-299 courses, or permission of the instructor. **CC:** LCCS, HUL **ISP:** AFR, LAS

SPN 431 - Latin America in Colonial Times

Course Units: 1.0 This course examines European, indigenous, mestizo and African chronicles of the encounter between Europeans, slaves and native Americans that started in the fifteenth century with the emergence of the "New World." By looking closely at the colonization and subsequent reconfiguration of communities and their cultures, the course analyzes the chronicle and representation of this trans-Atlantic collision and exchange from a historiographic and literary perspective. We will read travel journals, poetry, drama, histories, ethnographies, and other types of textual/visual production such as films and codices, a diverse production that bore witness to the many ways in which the various peoples of and in the Americas documented, perceived, and imagined the old and the new, themselves and others. **Prerequisite(s):** Two 300-level courses. **CC:** LCCS, HUL **ISP:** AFR, LAS

SPN 432 - Islands Adrift: Race, Politics, and Diasporas in the Hispanic Caribbean

Course Units: 1.0 Introduction to the literatures and cultures of Cuba, Dominican Republic, and Puerto Rico centering on how the region continues to approach its development tempered by an array of colonial legacies-from the slave plantation system to globalization-that impact on social, political, economic, and cultural dynamics. Diverse critical approaches will frame the analysis of literary, visual, and musical texts by Luis Pales Matos, Nicolas Guillen, Pedro Mir, Heberto Padilla, Tomas Gutierrez Alea, Aida Cartagena Portalatin, Celia Cruz, Ana Lydia Vega, Juan Luis Guerra, Reinaldo Arenas, Mayra Montero, among others. **Prerequisite(s):** Two 300-level courses. **CC:** LCCS, HUL, HUM, WAC, JLIT, JWOL, WAC-R **ISP:** AFR, LAS

SPN 433 - Latin American Colonial Crossroads at the Movies

Course Units: 1.0 This course explores critically filmic approaches to colonial Latin American literature and history. Its main objectives are to analyze films preoccupied with historical events and life in colonial times, to engage the filmic representation of the cultural, political, and religious encounters and tensions informing our desire to revisit contact

among Amerindians, African slaves and Europeans, and to familiarize students with debates pertaining to reconstructing the colonial past for contemporary consumption. **Prerequisite(s):** Two 300-level courses. **CC:** LCCS, HUM **ISP:** AFR, FLM, LAS

Music

AMU 131 - Music of Black America

Course Units: 1.0 Black music in America from its African beginnings to present-day pop styles, approached through live performance, lecture, video, and sound recordings. Special emphasis on gospel, blues, jazz, and rap. **Prereq/Corequisite(s):** Not open to students who have taken AMU 132. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AFR, AMS

AMU 132 - The History of Jazz

Course Units: 1.0 A study of the important personalities and trends in the evolution of jazz, approached through reading, video and sound recordings, and live performance. **Prereq/Corequisite(s):** Not open to students who have taken AMU 131. **CC:** LCC, HUM **ISP:** AFR, AMS

AMU 133 - Music of Latin America

Course Units: 1.0 Latin American music-cultures approached through live performance, lecture, video, and audio. Survey samples from folk, popular, and classical traditions, with special emphasis on the musics of Cuba and Brazil. **CC:** LCC, HUM **ISP:** AFR, LAS

AMU 134 - Music and Culture of Africa

Course Units: 1.0 Through an examination of traditional and popular music from across the continent, students will gain a better understanding of the integral role played by music in African culture. **CC:** LCC, HUM, JCAD, JCHF **ISP:** AFR

AMU 235 - Latin Percussion Workshop

Course Units: 1.0 The goal of this course is to give students an in-depth understanding of Afro-Cuban and Afro-Brazilian music through studying genres (rumba, son, mambo, salsa, comparsa, samba, forro) from inside the percussion section. In addition to ensemble work, students will research and transcribe Latin music styles. The course will culminate in a public performance/presentation at the end of the term. Entry to the course by audition; previous instrumental experience desirable but not required. **CC:** LCC, JCAD, JCHF **ISP:** AFR, LAS

Theater and Dance

ADA 140 - American Musical Theater and Dance

Course Units: 1.0 This course is an introduction to the American Musical from Vaudeville and Minstrel Shows to today's contemporary Broadway shows. Through lectures, video viewing, and workshops, students learn the historical background that focuses on the work of lyricists, composers, dancers, singers, choreographers, directors and producers. This unique American entertainment art form reflects American diversity and culture, changing times, values and trends. **Cross-Listed:** ATH 140 **CC:** LCC, HUM **ISP:** AFR, AMS

ADA 142 - Dance in America

Course Units: 1.0 An introduction to dance in America from Native American to contemporary diverse styles, approached through lecture, video viewing, and dance workshops. A voyage through time from the French Court with the birth of Classical Dance through the twentieth century with the development of Modern and Post-Modern Dance. Study of the advent of new music and dance with the African American heritage and American contributions towards social dancing. Special emphasis on historical background and international influences, studying the dancers, choreographers, traditions, and trends that influence the making of contemporary dance as an art and form of expression. **CC:** LCC, HUM **ISP:** AFR, AMS

Division 2: Social Sciences

Anthropology

ANT 181 - Anthropology of Sub-Saharan Africa

Course Units: 1.0 This course offers an ethnographic and ethnological survey of the diverse peoples and cultures of sub-Saharan Africa. To gain insight into the lives and experiences of peoples from across the region, we will examine both historical and contemporary forces that continue to shape political, economic, and sociocultural development. The course is organized thematically around a series of readings that give students an overview of the continent, its history and key topics in African anthropology. Anthropological approaches will be used to understand many of the challenges and innovations experienced across sub-Saharan Africa, including political conflict and democratization, development dilemmas, disease etiologies and witchcraft, popular culture, urbanization and environmental conservation. Through lectures, course readings, and discussions, students will enhance their knowledge of both Africa and anthropology. **CC:** LCC, SOCS **ISP:** AFR

History

HST 108 - Africa since 1800

Course Units: 1.0 This course is a survey of the African continent from 1800 to present. In this course, we will examine the political, social, economic and cultural changes in Africa during the nineteenth and twentieth centuries. Focus will be on key themes that span much of African history during this period including: slavery and the slave trade, European conquest and African resistance, the expansion of world religions (Islam and Christianity) in Africa, colonialism, the growth of nationalism, decolonization and the emergence of independent postcolonial states, and the challenges facing contemporary African states related to political instability and economic development. Given the enormous breadth and diversity of Africa, this course explores these themes by focusing on certain case study regions and countries, such as Francophone West Africa, Nigeria, the Congo region (Zaire), the East African coast and Arabic-speaking North Africa. **CC:** LCC, SOCS **ISP:** AFR

HST 131 - African-American History 1

Course Units: 1.0 The purpose of this course is to help you better understand both the role of race and slavery in early American history and the contributions of African-Americans to society and culture in America before 1877. The course will examine the lives of black Americans, enslaved and free, from the arrival of the first Africans in the New World through Reconstruction. It will also address more abstract ideas about cultural and "racial" differences. Throughout this course, you will be asked to consider the question "which came first, racism or slavery?" **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 132 - African-American History 2

Course Units: 1.0 This course covers the Black experience in America from the end of the Civil War until the present day. It will generally proceed chronologically, but there may be some overlap as it tries to cover certain themes, such as culture, oppression, resistance, and identity. Throughout the course students will be asked to consider the question to what extent is the African-American experience unique and to what extent is it representative of the "American" experience. **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 144 - Global Medieval World

Course Units: 1 This class takes you on a journey through the global medieval world examining connections and comparisons among societies across political boundaries and geographies, boundaries of language and religion, and at the intersection of various economic systems. Over a period of 1000 years, we will explore peoples of Mesoamerica, North and sub-Saharan Africa, the Mediterranean basin, western and eastern Europe, the Middle East, Central Asia, the Indian subcontinent (and Indian Ocean), East Asia and Oceania. **CC:** SOCS **ISP:** AFR, AIS, REL

HST 172 - Reform and Revolution in Latin America and the Caribbean

Course Units: 1.0 Examines the political and social changes in Latin America as a result of the nineteenth and twentieth century reform and revolutionary movements, including the Unidad Popular government in Chile under Salvador Allende and its overthrow by General Pinochet and the subsequent dictatorial rule. The effect of the 1959 Cuban Revolution on Latin America; the revolutionary uprisings in Central America, in Chiapas, Mexico, and against the military government of Argentina form other key areas of examination. The course places special emphasis on the intersection of gender, race and class conflicts and movements, with particular attention to the role of emerging feminist movements. **CC:** LCC, SOCS **ISP:** AFR, GSW, LAS

HST 173 - History of the Caribbean and Central America

Course Units: 1.0 This course covers the history of the Caribbean and Central America from pre-colonial times to the present. It includes a survey of the impact of both extinct and enduring indigenous cultures, the rivalries among Spanish, Dutch, French, and British powers for control of the Caribbean, and the history of slavery, the plantation system, rebellions and revolutions against enslavement, colonialism, and modern imperialism. The course ends with the early 21st-century struggles for self-determinism among the nations of the region. **CC:** LCC, SOCS **ISP:** AFR, LAS

HST 201 - Contemporary Africa

Course Units: 1.0 This course examines the history of Africa since 1950 with an emphasis on politics and culture. Through readings of novels, memoirs and historical accounts, combined with lectures, discussions and films, this course will explore the last fifty years of African history. Much of the course will focus on case studies in such countries or regions as West Africa, East Africa, the Congo, Nigeria, Algeria and Egypt. **CC:** LCC, SOCS **ISP:** AFR

HST 209 - Race, Gender, and Nationalism in American Sports

Course Units: 1.0 This course examines the development and the history of US sports from the 19th through the 21st centuries with special focus on sports' bond with nationalism, race, and gender. Modern sports cannot escape its association with US emergence in international affairs at the end of the 19th century. Intertwined with the process of establishing national identity were muscular Christian notions about masculine prowess and belief in women's natural physical limitations accompanied by a persistent belief in the fundamental superiority of the white race and its obligation to dominate over "inferior" races and cultures. As surely as sport became associated with American identity, nationalism, gender, and race became integral defining characteristics of sport. This course will be driven primarily by reading and discussion. Lectures will be used to supplement and place the readings in historical perspective, but the focus will be on reading, comprehension, and analysis. Students are encouraged to bring a variety of pre-occupations,

pre-conceived ideas, and personal viewpoints to the course; they will be expected to give oral and written expression to their analysis and perspectives. **CC:** SOCS **ISP:** AFR, AMS, GSWS

HST 231 - The Civil Rights Movement

Course Units: 1.0 A survey of the civil rights movement, assessing the early campaigns of the 1940s, the development of black grassroots organizations in the 1950s and 1960s, and the impact of black nationalist consciousness in the late 1960s and early 70s. **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 232 - History of New Orleans

Course Units: 1.0 This class examines the history of New Orleans from its founding in 1718 to the present day. The course will proceed chronologically and will focus on the recurring and interrelated themes of Race, Geography, and Culture. In the process we will unravel the extent to which the crescent city is or is not representative of the history of urban America in general. **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 257 - Modern France and Its Empire

Course Units: 1.0 In this course, we will examine the political, social, economic and cultural history of modem France and its empire since 1789. We will explore the history of France within wider transnational and imperial contexts, as well as in its post-colonial era, when immigration and cultural difference have emerged as central issues within France itself. Through lectures, discussions, novels, memoirs, and films, we will seek to understand the history of modern France as both a nation-state and empire. In particular, we will also look at the colonial and post-colonial histories of francophone West and North African countries. **CC:** SOCS, LCC **ISP:** AFR

HST 272 - History of Brazil

Course Units: 1.0 This is a survey interpretation of Brazilian history from the days of Portuguese expansion to the present, including the contrast between the urban and rural areas, the Atlantic slave trade, slavery and the resistance to it, the plantation system and post-abolition race relations, the destruction of the rainforest, the emergence of democratic structures in modern Brazil, and the rise of Brazil as a 21st century economic powerhouse. **CC:** LCC, SOCS **ISP:** AFR, LAS

HST 274 - Social and Political Movements in Latin America

Course Units: 1.0 This course examines the history of recent social movements in Latin America. We will explore a variety of issues including democracy, racism, class, gender and ethnic divisions, human rights, globalization and popular movements. Rather than viewing Latin America from a North American point of view, we will examine how Latin Americans see themselves and how their culture, economics, and politics have developed in different directions than other parts of the world, especially the United States and Europe. While social movements have at times erupted into full-fledged revolutionary upheavals, more often Latin American struggles have been ongoing, such as factory occupations, land seizures, and demonstrations for gender equality, workers' rights, indigenous autonomy, protection of the environment, and students' rights. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AFR, GSW, LAS

HST 302 - Comparing Muslim Cultures

Course Units: 1.0 This course explores the history of Islam in diverse regional and temporal settings. It explores the unity of Islam, through an examination of the early history of the religion and its founding texts and tenets. However, the main emphasis of this course will be Islam's remarkable heterogeneity over time and space; the foci will be case studies drawn from across the Muslim world - in Africa, the Middle East Asia and Europe. Through readings and discussions, the course examines the following ten topics: The foundation of Islam, the expansion of Islam and

conversion processes, Muslim travelers and trade, religious tolerance, women and gender in Islam, Islamic Education, religious revivalism and reform, Muslim lands under European colonial rule, Islam in the West, and the challenge of modernity. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AFR, REL

HST 304 - Cold War in Africa

Course Units: 1.0 This course will explore the Cold War period in African history with particular focus on theaters of conflict, such as the Congo, the Horn of Africa, and Angola, as well as revolutionary movements. We will examine modes of governance and political culture in African states, socialist and capitalist variants of development, and their discontents. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AFR

HST 315 - Race and Constitution

Course Units: 1.0 One purpose of this course is to help you better understand the role of race in the legal, constitutional, and political history of the United States. Issues regarding race and slavery have been a constant source of constitutional debate (in one way or another) from the drafting of the Constitution until the present day. Focusing on racial issues, this course examines the historical context in which the Constitution of the United States was drafted and ratified and explores the various methods by which its meaning has changed since 1787. Therefore, this course is about both race in America as well as the Constitution and Constitutional interpretation. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS, WAC **ISP:** AFR, AMS

HST 323 - Race and Revolution

Course Units: 1.0 This course examines the American Revolution and the Haitian Revolution. With regard to the former, it addresses the "Jefferson question" - that is, how could the author of the Declaration of Independence be the owner of over 200 slaves. Therefore, it deals with competing interpretations in the Early American Republic of the Ideology of "liberty" and "equality." Next, the course delves into the far more radical Haitian Revolution, the only successful slave revolution in history. It will deal with the influences of the American and French revolutions on the French New World colony of St. Domingue that made the Haitian revolution possible. Finally, the course examines the impact of the Haitian Revolution on slavery and the anti-slavery movement in the United States. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AFR, AMS, LAS

HST 324 - Race in American Memory

Course Units: 1.0 "The struggle of man against power," wrote Milan Kundera, "is the struggle of memory against forgetting." This course will examine that struggle as it has taken place in the United States around the issue of race. How have Americans as a nation chosen to remember events that involved race? How and by whom were these collective memories constructed? In what ways were they contested? How have they changed over time? We will explore these issues focusing on such phenomena as Indian removal, slavery, the Civil War, Jim Crow, Japanese internment and World War II, and the Civil Rights movement, examining depictions in public history and popular cultural forms, including memorials, museums, battlefields, literature, and film. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 401 - Seminar in Africa/Middle East

Course Units: 1.0 **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, WAC, WAC-R **ISP:** AFR, REL

HST 402 - Seminar in Africa/Middle East: French Empire

Course Units: 1.0 This course examines the history of the French empire in West Africa, North Africa and Southeast Asia. The aim of the course is to introduce students to the history of the wider Francophone world. Three main phases in the long history are explored: colonialism, decolonization and immigration. The course moves chronological through these phases exploring each in diverse geographical settings, and drawing on readings pertaining to particular themes such as the culture of empire, political economy of colonialism, women and gender, literature and expressive culture, colonial violence, and resistance. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS, WAC, WAC-R **ISP:** AFR

HST 412 - Seminar in US History: The Old South

Course Units: 1.0 This class examines the history of the Old South, focusing on the period from 1800 to 1861. The lectures and readings cover a variety of topics, including myths and facts about southern society and culture, slavery and the strengthening of southern distinctiveness, and political events that eventually lead to the creation of a separate (short-lived) southern nation in 1861. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS, WAC, WAC-R **ISP:** AFR, AMS

Political Science

PSC 216 - Politics in Africa

Course Units: 1.0 This course is designed to introduce students to the essential political history and political dynamics of contemporary Sub-Saharan Africa. By the end of the term, students will have developed an understanding of the process through which the states of contemporary Sub-Saharan Africa emerged; the types of political systems that have evolved in these states; ethnicity and ethnic conflict in Africa; inter and intra-state wars on the continent and their impact; the challenges of economic development and securing prosperity for Africa; and gender and politics, religion and politics, and the politics of terrorism in Africa. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **ISP:** AFR

PSC 235 - African American Political Thought

Course Units: 1.0 This course will introduce students to the critical and constructive dimensions of African American political thought. We will assess the claims that Black Americans have made on the polity, how they define themselves, and how they have sought to redefine the basic terms of American public life. **CC:** SOCS, WAC **ISP:** AFR, AMS, GSWS

PSC 284 - Political Sociology

Course Units: 1.0 Issues of political power, domination, and legitimacy from a sociological perspective. Topics include the creation and maintenance of political power, the role of legitimacy and the impact of political socialization. **Cross-Listed:** SOC 240 **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AFR, AMS, GSWS

Sociology

SOC 212 - The American Family and Cross-Cultural Perspectives

Course Units: 1.0 This course examines historical and contemporary patterns of American family from cross-cultural perspectives. We explore the ways in which race/ethnicity, social class, gender roles, conflict and crisis, and the media influence family life. **Prerequisite(s):** SOC 100 **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AFR, AMS, GSWS

SOC 230 - Sociology of the Black Community

Course Units: 1.0 This course is an introduction to African American society as revealed in the empirical literature of social sciences. Teaching and Learning in the context of this class will be multidimensional. You will learn about social structure and inequalities through readings, lectures, discussions, popular media examples, and field trips. Using these pedagogical strategies, our class will work as a learning community to explore contemporary issues relating to African American experiences. **Prerequisite(s):** SOC 100 **CC:** LCC **ISP:** AFR, AMS

SOC 233 - Race, Class, Gender, and Sexuality

Course Units: 1.0 The issues of gender, race, and class as organizing principles within sociology. The course draws broadly from the critical tradition, which focuses on issues of power, control, opportunity, gender, and economic relations. **Prerequisite(s):** SOC 100 **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AFR, AMS, GSWS

SOC 240 - Political Sociology

Course Units: 1.0 Explores issues of political power, domination, and legitimacy from a sociological perspective. Topics include the creation and maintenance of political power and the impact of political socialization. **Cross-Listed:** PSC 284 **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AFR, AMS, ENS, LAW

Division 3: Sciences and Mathematics

Psychology

- PSY 260 - Culture and Psychology

Africana Studies Minor

Requirements for the Minor:

Six courses including:

AFR 100 - Introduction to Africana Studies

Course Units: 1.0 An interdisciplinary introduction to the field of Africana Studies. This course will examine the issues and perspectives-social, economic, political, historical, and cultural-of the peoples of Africa and the African diaspora. **CC:** LCC **ISP:** AIS, AMS, LAS

Five courses selected from the Africana Studies Associated Course list offered in a variety of departments and crossing at least two of the college's three divisions

Africana Studies, B.A.

Requirements for the Major

Twelve Courses including:

AFR 100 - Introduction to Africana Studies

Course Units: 1.0 An interdisciplinary introduction to the field of Africana Studies. This course will examine the issues and perspectives-social, economic, political, historical, and cultural-of the peoples of Africa and the African diaspora. **CC:** LCC **ISP:** AIS, AMS, LAS

AFR 498 - Africana Studies Senior Thesis 1

Course Units: 0.0 **ISP:** AFR

AFR 499 - Africana Studies Senior Thesis 2

Course Units: 2.0 **Prerequisite(s):** AFR 498 **CC:** WS **ISP:** AFR

• Nine courses selected from the Africana Studies Associated Course list offered in a variety of departments and crossing at least two of the College's three divisions.

Requirements for Honors in Africana Studies:

Candidates for honors must meet College requirements, have a cumulative grade point average of 3.3 in Africana Studies, at least three "A" or "A-minus" grades in Africana Studies courses, and have earned an "A" or "A-minus" on the senior thesis. Departmental honors are formally awarded at the discretion of the director of Africana Studies in consultation with Africana Studies faculty.

American Studies

Director: Professor Lori Marso (Political Science)
Faculty: Professors B. Lewis, Stephen Schmidt (Economics), J. Murphy, J. Smith (English), A. Feffer (History), W. Garcia (Modern Language and Literature), J. Matsue, T. Olsen (Music), C. Brown, Z. Oxley (Political Science), D. Cotter, M. Goldner (Sociology); Associate Professors R. Samet (Anthropology), K. Lynes, J. Troxell, B. Tuon (English), K. Aslakson, A. Foroughi, A. Morris (History), B. Hays (Political Science), D. Butler, T. Stablein (Sociology), L. Cox (Visual Arts); Senior Lecturer: T. Lobe (Political Science)

American Studies is an interdisciplinary field of concentration in the liberal arts relating to the United States as a geographical area and a cultural and political space. Drawing on courses from fourteen departments, students learn to move among and connect history, art, politics, religion, popular culture, literature and other features of American life. Students are encouraged to explore the diverse character of the American experience, shaped by gender, race, class, sexuality, geography and ethnicity, and to situate that experience in a context of global economic, cultural and political relationships. Students are asked, however, to develop a coherent approach to the study of American culture, politics and society, past and present. To accomplish these tasks, students in the American Studies program collaborate closely with an academic advisor to work out a thematic core around which to build a unique and innovative course of study that knits together the methods and perspectives of several disciplines. Themes may be centered on a specific era (e.g., antebellum America or the United States since the Cold War) or a topic (e.g., the emergence of mass culture or ethnicity and race in American life).

The American Studies program offers an individualized program of study that allows each student to tailor his or her course work to personal interests and needs. There is no one way to complete the major or minor. A student is urged to

meet with the Program Director as soon as he or she becomes interested in the program, preferably by the end of the sophomore year. Course planning forms can be found at the American Studies website.

American Studies (ID), B.A.

The purpose of the American Studies Interdepartmental major is to allow students the opportunity to cultivate a multi-dimensional picture of our culture as a complement to or in relation to another area of concentration, be it Middle Eastern history or an area of interest outside the humanities and social sciences. As with the full American Studies major, interdepartmental majors must focus their coursework around a coherent topic, either chronologically or thematically. (See possible concentrations under requirements for major.)

Requirements for the Interdepartmental Major:

Eight courses including:

Note: One of the eight courses must cover issues of race and ethnicity or gender in America. One of the eight courses must focus predominantly on the pre-1900 time period. At least three courses must be from Division I (Arts and Humanities), and at least three from Division II (Social Sciences). The eight required courses must be from at least three different departments and have American Studies course approval. No course can double count towards the student's minor if one is being pursued.

One English core course

One History core course

Four courses with either an historic or thematic concentration, in consultation with their American Studies academic adviser.

Note: One of the four must come from Division I (Arts & Humanities) and one from Division II (Social Sciences).

One American Studies approved seminar or an upper level American Studies approved course that is a WAC in the junior year.

Note: If possible, the course should be on a topic related to the thematic concentration. If not taken in the junior year, this course must be completed by the end of the student's first senior thesis term.

Two-term written thesis or two-term senior project related to the student's thematic concentration, or a WAC (WS) course with American Studies approval, in the senior year.

Note: The ID thesis should combine work on the student's American Studies theme with work in the other ID program or department. If a student is completing a senior project in a non-text medium (such as audio, video, or multi-media), he or she must have a written component in the form of a journal that results in a final paper of at least fifteen pages, to fulfill the Writing Across the Curriculum (WS) requirement. A student will work with a primary, or first, thesis advisor and a second thesis advisor from a different department whom the student must consult early during the research portion of the project to better ensure the interdisciplinary focus of the thesis. Both thesis advisors will participate in the oral defense of the thesis at the completion of the project. The other department or program may also assign the student

a thesis advisor. A student must consult with the American Studies program director during the winter term of his or her junior year and submit a thesis proposal listing preferred first and second thesis advisors.

AMS 498 - American Studies Senior Thesis 1

Course Units: 0.0

AMS 499 - American Studies Senior Thesis 2

Course Units: 0.0 **CC:** WS

IDM 498 - Interdepartmental Senior Thesis 1

Course Units: 0.0 For interdepartmental majors who are pursuing a two term senior thesis. The first half is graded Pass or Fail. **CC:** WS

IDM 499 - Interdepartmental Senior Thesis 2

Course Units: 2.0 Second half of a two term senior thesis. **Prerequisite(s):** IDM 498 **CC:** WS

Requirements for Honors in American Studies:

To receive honors as an American Studies major or an ID major, a student must (1) have a cumulative grade point average of 3.3; (2) maintain a grade point average of 3.3 in his or her American Studies approved courses; (3) successfully complete a two term senior thesis with a grade of A or A-; (4) receive a high pass or pass with distinction for the oral thesis defense; (5) give an oral presentation at The Steinmetz Symposium in the spring of his or her senior year; and (6) place a copy of the thesis in the library archives. Further guidelines for the senior thesis and honors are available from the program director.

American Studies Approved Courses

The following courses, from fourteen different departments, have American Studies approval to count towards the major, ID major, and minor. Descriptions of the courses can be found in the Academic Register under the respective departments that offer them. Those marked with an asterisk (*) are American Studies approved courses that meet the race and ethnicity or gender requirement. Those marked with a pound sign (#) are American Studies approved courses that meet the pre-1900 requirement. Note that some American Studies approved courses require prerequisites, which can be found under the department course descriptions. New courses not listed may be granted American Studies approval as determined by the Program Director. All courses counted towards the major or minor must have American Studies course approval.

Course Selection Guidelines: A student must meet with his or her American Studies academic advisor prior to registration. It should be noted that some courses, notably in English and Economics, require prerequisites, so a student needs to make plans early in his or her studies to complete these planning to take an upper-level course in these departments. A student must consult with the American Studies Program Director and the Registrar for approval of AP or IB credits for the major.

Division I Arts and Humanities Courses

Art History

AAH 160 - Art and Architecture of the United States

Course Units: 1.0 An introductory survey of the visual culture of the United States from colonial times through the present including painting, sculpture, architectural structures, photography, folk traditions and objects more recently defined as "material culture." Artists and media are situated and studied within the context of broader cultural, political and social themes. Emphasis on visual and textual analysis. **CC:** HUM **ISP:** AMS

AAH 208 - The Business of Visual Art and Contemporary Entrepreneurship

Course Units: 1.0 In this course students will study and learn the business of the art world and entrepreneurship in the visual arts from the early 20th century through today. Topics to be covered include the economics of the art market and the commodity of art, auction houses, private collectors, art fairs, gallery ownership, art foundations, non-for-profits, and art criticism. Group assignments, field trips and guest lectures form a large component of the course. **CC:** LCC, HUM **ISP:** AMS

AAH 222 - History of Photography

Course Units: 1.0 An introductory survey of the history of photography from its pre-history to the present. We will explore the evolution of photographic expression in the period, and focus on relationships between photography and fine art, photography and popular culture, and photography and theory. We will spend time studying first-hand the original photographic works housed in Special Collections, Schaffer Library and in the Union College Permanent Collection. **CC:** HUM, JCHF, JCAD **ISP:** AMS, FLM

AAH 265 - Environmentalism and Globalization in Contemporary Art

Course Units: 1.0 This course examines artistic practices that meld science, aesthetics, and politics in imaginative and critical ways as they address environmentalism and globalization. The course primarily focuses on 21st century artists whose work takes on such subjects as pollution, biodiversity, sustainability and climate change. We will consider the blurring of the boundaries between art and activism and the many art genres and strategies used to address these issues from photography and sculpture to community collaborations and public art. **CC:** HUM, GCAD, GCHF, GSPE **ISP:** AMS, ENS, STS

AAH 360 - Seminar: Visual Culture, Race and Gender

Course Units: 1.0 A lecture and discussion-based course concerned with how constructions of race and sexual differentiation are played out across art history and visual culture, focusing on the visual arts of Western Europe and the United States. The first half of the course investigates the constructs of gender and race from antiquity to the middle of the 20th century as expressed in art and visual culture. The second half of the course is a close study of female artists of color living and working in the United States, grouped as African- American, Latina/Chicana, Asian and Middle Eastern and Multi-ethnic. **CC:** LCC, HUM, JCAD, JCHF **ISP:** AFR, AMS, GSWS, LAS

AAH 363 - Early American Modernism, 1900-1945

Course Units: 1.0 A study of modern art in the United States from 1900-1945. Topics to be covered reflect the divergent styles, movements and influences that gave shape to the art of this period, including the rise of the avant-garde in New York City, important patrons, social realism, the WPA and the Harlem Renaissance to name a few. Art works are studied in relation to the cultural and political context of the period. Verbal and written interpretation of art; emphasis on visual and textual analysis. **CC:** HUM, LCC **ISP:** AMS

AAH 366 - Contemporary Art

Course Units: 1.0 Art of the United States and Europe since World War II in critical and historical perspective, emphasizing the influence of social movements on artistic thought and expression. Topics include the impact of technology and popular culture, the subversion of the traditional boundaries between arts, the rejection of the object, and the rise of pluralism. **CC:** LCC, HUM **ISP:** AMS

Classics

CLS 151 - The Ancient World in Film and Literature

Course Units: 1.0 Greco-Roman antiquity has been a favorite topic of Hollywood for years. This fascination continues today, with the recent appearance of major blockbusters as well as TV productions. Why do the Greeks and Romans appeal to a modern audience? This course will consider ancient texts in translation alongside their modern film representations. Our goal will not be to consider where the films went "wrong." Instead, we will question how these films recast and reinterpret classical texts to reflect modern interests. This course will include an "entrepreneurship module." We will question what is entrepreneurship and if Hollywood's commodification of the ancient world is entrepreneurial. **CC:** LCC, HUL, HUM, JCAD, JCHF, JLIT **ISP:** AMS, FLM

English

Note: A student must take EGL 100, EGL 101, or EGL 102 as a prerequisite for any 200-level course in the English Department. A student must take two 200-level courses before enrolling in a 300-level course and four 200-level courses before enrolling in a 400-level course.

EGL 213 - Circum-Atlantic Revolutions

Course Units: 1.0 This course will draw on literary and historical writings and artwork that emerged before, during, and after the three revolutions that ravaged the circum-Atlantic world between 1765 and 1804. We will consider interconnected events leading up to each conflict and the consequences of war on racial, ethnic, gendered, and indigenous groups. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF,JLIT, JSPE **ISP:** AFR, AMS, GSWS

EGL 230 - Seduction in Early American Republic

Course Units: 1.0 In her seminal study, *Revolution and the Word*: *The Rise of the Novel in America*, Cathy N. Davidson argues that "literature is not simply words upon a page but a complex social, political, and material process of cultural production" (viii). The eighteenth-century sentimental novel serves to highlight a moment in history lodged among judgments, anxieties and controversies about the direction the newly-formed American Republic would take at the end of the Revolution. Embedded within these narratives are questions about both men's and women's power and authority in the public and private spheres, the negation of the female self, the seductive function of romance and courtship, and the perception of women's bodies as moral, social, and biologic commodities. This course seeks to explore disjunctions between the sentimental structure of the early American novel and its contradictory attitudes toward liberty and self-expression. Through the lens of queer theory, affect theory, and new materialism, students will examine how seduction, homoerotica, and cross-dressing both reinforce and subvert American values and ideals that are distinct from European standards of morality. The readings will also consider how the cult of "true womanhood," prominent during the first few decades of the nineteenth century, suppressed pleas for women's equality. How do the texts under consideration help to define the new nation, its citizens, and boundaries? In what ways do these texts consolidate nationhood through the formation of a national literature and the narrative structure of a national history, culture, and consciousness? Do these novels construct, conserve, or undermine American cultural institutions? **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, GSWS

EGL 231 - Nineteenth-Century American Literature

Course Units: 1.0 This course focuses on the self-conscious development of literary tradition in 19th century America -- its meaning, its implications, its failures -- and its aesthetic and moral possibilities. Writers under consideration may include Emerson, Fuller, Thoreau, Douglass, Hawthorne, Melville, Dickinson, and Twain, and topics will include individualism, transcendentalism, abolition, the coming of war, the aftermath of war, growth, expansion, and power. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 233 - 18-19th Century Early Literature of African Diaspora

Course Units: 1.0 This introductory survey course will trace African American movement towards literary and aesthetic mastery beginning with what Henry Louis Gates calls "oral writing." Readings begin with the first known written poems and progress from slave narratives and autobiography to essays and fiction. Authors include Phillis Wheatley, Harriet Jacobs, Frances Ellen Watkins Harper, Solomon Northup, Charles Chesnutt, W.E.B. Du Bois, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AFR, AMS, GSWS

EGL 236 - Trans-Atlantic Realism and Naturalism

Course Units: 1.0 Realism and naturalism were aesthetic movements that emerged in American fiction between approximately 1865 and 1925. This course examines these two literary movements to show how writers of this era explored the trauma created by war (the Civil War and WWI), the moral consequences of freedom and sexual awareness, rapid urbanization and the Great Northern migration, inconsistencies between wealth and poverty, and innovative discoveries in science and technology. The purpose of this course, then, is to investigate how the authors of this period practiced their art both collectively and individually and the ways in which American social life informed the ideologies of realism and naturalism. Possible writers we will study include William Dean Howells, Stephen Crane, Frank Norris, Theodore Dreiser, Kate Chopin, Mary Wilkins Freeman, Mark Twain, Edith Wharton, Henry James, and Paul Laurence Dunbar. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, GSW

EGL 237 - Reclamation & Renaissance: Black Literary Arts 1900 to 1960, "Dark Like Me - That is my Dream!"

Course Units: 1.0 In this course we will read literatures of African diaspora from the United States and from the English-speaking African Diaspora more broadly speaking, written in the early to mid- 20th century. This course is deliberately using the adjective Black instead of African American to highlight our awareness that the literature of the early 20th century is part of a Pan-African movement. Threads we will follow include: issues of identity (being American; being Black; racial and social passing); miscegenation; claims to culture through literature; political and social change through literature (is it possible?); self-representation and activism through literary arts; rise of pride in being part of African diaspora; gender roles in literary and social contexts. Questions we will raise and explore in the course of the term include: What is the relationship between aesthetic production and political action? What are the gendered aspects of the expressions of the writers and artists? How are "folk" forms incorporated into "literary" forms? How does self-representation operate in the reclamation of a sense of self? We will engage with the complexities of cultural diversities within the African diaspora while we contemplate the traditions we follow. We will begin, as the title of the course suggests, around the turn of the 20th century, when Du Bois writes that the "problem of the twentieth century is the problem of the color line" (Souls of Black Folk 45). We will move through what some called the Harlem Renaissance, during which time writers such as Langston Hughes celebrated being Black in a reclamation of the self: "Dark like me-That is my dream!" (Selected Poems 14). We will explore the literature of the pre- and post- WWII era, ending the term with what was known as the Black Arts Movement. The goal, in terms of content, is to provide you with a broad sampling of literature of the African Diaspora literature of the early 20th century, with a particular focus on literature (prose in the form of essays, short stories, novels; poetry; plays) generated from the United States while

also reaching toward its more global pan-Africanist roots. I hope you will follow your interests and curiosities, after the course is over, to explore this literature further. (Also counts for Africana and American Studies). **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JLIT **ISP:** AFR, AMS

EGL 248 - Introduction to Black Poetry

Course Units: 1.0 We will explore the development of African-American poetic voices in North America. We will look at poems and poets as they constitute a hybrid and composite tradition. We will read poetry in anthologies; we will also read several full books by individual authors, and will listen to performance poetry on CD and DVD. A partial list of poets we will read includes Wheatley, Harper, Dunbar, Hughes, McKay, Helene Johnson, Brooks, Baraka, Clifton, Sanchez, Cortez, Morris, Mullen, Brathwaite, Komunyakaa, Francis, Dungy, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AFR, AMS

EGL 249 - Contemporary Poetry

Course Units: 1.0 In this course, we will take a close look at the work of five poets, three whose lives have spanned the American experience from the 1960s to the present (Peg Boyers, Carl Phillips, Frank Bidart) and two younger poets (Chelsea Woodard and Diane Mehta, both Union graduates). We'll take a look at the problem of the speaker in the poems (who may be the poet, more or less, or a mask, or a fiction, or some combination), which is also a way of asking questions about identity, history, and culture, as well as about freedom and restraint, the possibilities and limitations of language. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 250 - The Beats and Contemporary Culture

Course Units: 1.0 An examination of the writers of the Beat Generation (including Allen Ginsberg, Jack Kerouac, Gary Snyder, Edward Sanders) and of their lasting influence on American popular culture. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, GLIT, GCAD **ISP:** AMS, GSWS, REE

EGL 253 - Narratives of Haunting in US Ethnic Literature

Course Units: 1.0 This course examines the theme of haunting in contemporary US ethnic literature. With this theme in mind, we will investigate the following questions throughout the trimester: Why is haunting such a prevalent theme in ethnic writing? What do we mean when we say that a text is haunted? What are the causes of haunting? What is possession? What are some ways to dispossess or exorcise ghosts? What are the functions of ghosts? Is there such a thing as a good haunting? What are their messages to us? How do we listen to ghosts? Authors include Lan Cao, Nora Okja Keller, Maxine Hong Kingston, Cynthia Ozick, Toni Morrison, Sandra Cisneros, and Leslie Marmon Silko. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, JCHF, JLIT **ISP:** AMS, GSW

EGL 254 - Discourses on the Viet Nam/American War

Course Units: 1.0 This class will examine various perspectives on "The Vietnam War," or, as the people of Viet Nam call it, "The American War." In our archeological exploration into the nature of knowledge about this period in Viet Nam/U.S. history, we will not privilege one perspective over another. Rather, we will examine the diverse political, ideological, and moral positions from which various groups, such as the U.S. government, U.S. soldiers, U.S. citizens, the North Vietnamese people, and the South Vietnamese people, perceive this historic conflict. **Prerequisite(s):** One

100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, GCHF, GLIT **ISP:** AIS, AMS

EGL 255 - Asian American Literature and Film

Course Units: 1.0 If you are interested in the diverse history of Asian immigration in the U.S., take this course. Together as a class, we will examine major historical moments in Asian America: the first wave of Asian immigration in the mid-nineteenth century, the anti-Asian laws of the late nineteenth century, the Japanese internment during the Second World War, the emergence of Asian American studies during the 1960s Civil Rights Movement, Southeast Asian refugees after the Viet Nam/American War, and the contemporary turns to the transnational and the pan ethnic. To cover these historical moments, we will read the following texts: Island: Poetry and History of Chinese Immigrants on Angel Island, Eat a Bowl of Tea, Farwell to Manzanar, When Broken Glass Floats, American Born Chinese, and American Son. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AIS, AMS, FLM

EGL 256 - Southeast Asian-American Experience

Course Units: 1.0 This course examines the diverse literatures, histories, and cultures of the Vietnamese, Cambodian, Hmong and Laotian through the lens of war, migration, and return. Specific attention will be paid to how the War in Vietnam spread to neighboring countries such as Cambodia and Laos, resulting in mass migration of people from Southeast Asia to the West, specifically the United States. We will examine the literatures, oral testimonies, films, and music created by Southeast Asians in America. Possible authors include: Andrew Lam, Bich Minh Nguyen, Le Thi Diem Thuy, Loung Ung, Chanrithy Him, Kao Kalia Yang, Mai Neng Moua, and Burlee Vang. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AIS, AMS

EGL 266 - Black Women Writers

Course Units: 1.0 This course provides an introduction to the major themes and concerns of twentieth- and twenty-first century African American women writers. We begin in the 18th century and move quickly to the 20th and 21st. We will examine the ways in which black womanhood is characterized through intersecting categories of race, gender, class, sexuality, and empire. We will explore how selected authors wrestle with stereotypical images of African American women, examine the connections between black womanhood, community, and empire, and discuss the benefits and limitations of the concept of "black women's writing." Possible writers include Frances Harper, Maria Stewart, Anne Spencer, Zora Neale Hurston, Gwendolyn Brooks, Toni Morrison, Audre Lorde, Gloria Naylor, Octavia Butler, and others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM **ISP:** AFR, AMS, GSW

EGL 275 - Autobiography

Course Units: 1.0 This course explores the development of the autobiographical genre from the late 18th century to the present day, beginning with Jean-Jacques Rousseau's *Confessions*. Through a combination of close reading, historical contextualization, and critical analysis, we will engage with key texts that have shaped the autobiographical form. Readings will focus on the interplay of memory, truth, and storytelling, as well as the ethical dimensions of self-representation. We will also explore the ways authors shape their life stories to reveal complex identities, cultural contexts, and historical moments. Reading lists vary widely from term to term. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 279 - Literature and Science

Course Units: 1.0 An interdisciplinary examination of the interactions between literature and science. Topics will vary from year to year and may include science writing, the representation of science and scientists in literature, literature inspired by science, literature and science as competing ways of knowing the world, the figurative dimension of scientific writing, and speculative fiction. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, STS

EGL 280 - Nature and Environmental Writing

Course Units: 1.0 This course will focus on the traditions of nature and environmental writing in the American context, with an emphasis on the social and cultural dynamics of the environment and environmental action. Among other questions, we will ask ourselves: How do class, gender, and race enter into the nexus of social interactions that shape our environment? What is the place of literature in community, literacy, and environmental activism? What are the connections between the ways we speak and write about the environment and our actions toward the environment? How does the wilderness concept affect the ways citizens have access to public spaces? We will consider the concept of "nature" as we move through the course, culminating (if you like) with some nature writing of your own. Readings may include Thoreau; Carson; Leopold; Kingsolver, and selections from *Reading the Roots: American Nature Writing Before Walden*; *Colors of Nature*; Lauret Savoy, T*race: Memory, History, and the American Landscape*; and F. Marina Schauffler, *Turning to Earth: Stories of Ecological Conversion.* **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, ENS, STS

EGL 281 - Environmental Psychology and the American Literary Landscape

Course Units: 1.0 Environmental research psychologist Maria Vittoria Giuliani emphasizes that human-to-place attachments "not only permeate our daily life but very often appear also in the representations, idealizations and expressions of life and affect represented [in] literature." Indeed, many literary works emphasize humanity's basic attachment needs and the importance person-to-place bonds have in the development of the human psyche. American fiction writers frequently employ descriptions of American landscapes as inspiration for character and plot development, and American nature writers often emphasize the way in which wilderness environments may influence one's mental and physical health and emotional well-being. In fact, recent studies in the field of cognitive neuroscience provide empirical evidence to substantiate the theory that exposure to a natural environment may actually generate structural changes in the brain by increasing oxygenation and blood flow that occur in response to neural activity. Hence, this course will employ contemporary studies in place attachment, environmental psychology, and cognitive neuroscience to examine the way in which various literary works illustrate the important role environment plays in aiding or obstructing one's ability to think, reason, remember, problem-solve, process information, use language, or be creative. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, ENS

EGL 288 - Film as Fictive Art

Course Units: 1.0 What exactly does the designation "indie" mean when both filmmakers who disseminate their work online and specialized divisions within Hollywood studios claim this term as their own? In this course we will trace the development of the independent cinema from the late 1960s when first-time directors challenged Hollywood norms to create the New American Cinema, through its heyday the 1990s, into the present era-where many argue it has become thoroughly institutionalized. In examining the enormously flexible characterization "independent" we will draw on of a variety of code systems (cultural, artistic, narrative, cinematic, and intertextual) to analyze the work of such directors as George Romero, Julie Dash, Todd Haynes, Mira Nair, Jim Jarmusch, Spike Lee, and Kelly Reichardt. **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC, GCAD, GLIT, GSPE **ISP:** AMS, FLM

EGL 289 - The Essay Film Workshop

Course Units: 1.0 Deriving its meaning from the French *essayer*: to try; to attempt, the essay film is an experiment in form and expression. Weaving together elements of fiction and documentary, the essay film foregrounds the subjectivity of the filmmaker and engages the viewer as participant and collaborator. Relying heavily on montage, the essay film often employs found footage as well as cinema verité techniques-where the camera acts as quasi-therapist, eliciting new performances and confessions. In an approach combining theory and practice, we will explore the many aspects of the essay film genre. Foundational readings by Michel de Montaigne, Georg Lukács, and Phillip Lopate will be paired with visual essay by Issac Julian, Chantal Akerman, Mona Hatoum, and Marlon Riggs among others. Experimenting with form and method, students will produce weekly writings and visual exercises and an extended essay film. **Cross-Listed:** FLM 289 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, FLM

EGL 290 - Studies in Film Genre/Style: Film Noir

Course Units: 1.0

Over the course of the term, we will analyze the history and aesthetics of genre categories and their revisions with respect to specific codes and characteristics, audience expectations, technological developments, and publicity practices. In our investigation of the question of genre, we will engage such key concepts in film theory as authorship, narrative, mise-en-scène, suture, spectatorship, and the gaze. As we seek to understand why genres gain popularity in certain historical moments and the ways in which genres are revised, we will employ a variety of critical tools, drawn from genre theory, critical race studies, environmental studies, and theories of gender and sexuality. Finally, we will ask whether genre studies as a critical approach is keeping pace with the many new developments shaping cinematic form.
Film Noir

This term, our investigation of genre will focus specifically on film noir. We will study the genre's emergence from German Expressionism, pre-code gangster movies, screwball comedy, and hard-boiled detective fiction and consider the historical factors that led to the burgeoning of film noir in the 1940s and 50s. In addition to the standard characters (detective, femme fatal, gangsters, "deviants"), we will analyze filmic styles (low-key lighting, voice-over narration, etc.) and themes of alienation, corruption and existential drift that characterize the genre. From its origins in post-World War II America, we will explore film noir's radical revisions and geographic relocations as it is taken up in such places as France, Hong Kong, Korea, and Mexico. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUM, WAC, JLIT, JSPE **ISP:** AMS, FLM

EGL 293 - Workshop in Poetry

Course Units: 1.0 This is a course for students with a serious interest in writing poetry. Classes will be divided between discussions of literary technique, workshop critiques of student writing, and consideration of the work of several contemporary poets. Students will prepare a final portfolio of ten to fifteen pages. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 296 - Screenwriting Workshop

Course Units: 1.0 This course is designed to introduce student to the art and craft of screenwriting. In addition, to screenplay format, we will investigate character development, structure, narrative style, dialogue, and techniques of visual storytelling. Screenings, screenplay analysis, outside reading, in-class discussion, as well as guest lectures will broaden students' understanding of the screenwriting process. By the end of the term, students will have completed several short scenes and one short screenplay. **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Compositon test, or permission of the instructor. For Film studies students, EGL 150 is recommended. **CC:** HUM, WAC, JLIT, JCAD **ISP:** AMS, FLM

Note: Junior and Senior Seminars: Not listed here because topics vary year to year, but in order to earn American Studies credit, the author must be American, such as Emily Dickinson, Bob Dylan, writers of the Harlem Renaissance, and others.

Music

AMU 130 - American Music

Course Units: 1.0 American music-cultures approached through performance, lecture, video, and audio. Survey samples from popular, classical, and folk traditions. **CC:** HUM

AMU 131 - Music of Black America

Course Units: 1.0 Black music in America from its African beginnings to present-day pop styles, approached through live performance, lecture, video, and sound recordings. Special emphasis on gospel, blues, jazz, and rap. **Prereq/Corequisite(s):** Not open to students who have taken AMU 132. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AFR, AMS

AMU 132 - The History of Jazz

Course Units: 1.0 A study of the important personalities and trends in the evolution of jazz, approached through reading, video and sound recordings, and live performance. **Prereq/Corequisite(s):** Not open to students who have taken AMU 131. **CC:** LCC, HUM **ISP:** AFR, AMS

AMU 221 - From Rhythm and Blues to Radiohead: The History of Rock & Roll

Course Units: 1.0 Explores the historical development of Anglo-American rock-and-roll through lecture, video and sound recordings. This course will rely heavily on film, with an accompanying series featuring documentaries, concert films, musicals and more. Students will gain a greater understanding of the socio-cultural contexts that informed stylistic change, as well as consider the continued relevance of rock today. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, JCHF, JCAD, WAC **ISP:** AMS, GSWS

AMU 230 - Musical Theater & Opera Scenes Workshop

Course Units: 1.0 This class aims to help students discover their potential for singing, acting, and dancing through the performance of scenes from the opera and musical theater literature. Special emphasis will be given to the improvement of sight-reading. Through a combination of lecture and hands-on performance, students will also learn to understand the basics of voice types, vocal technique, and other performance-related issues in the field. Guest speakers and instructors will be invited to share their experiences with students to further their understanding of the vocal performance industry. **CC:** HUM **ISP:** AMS

Modern Languages

MLT 203 - Asian American Film and Performance

Course Units: 1.0 An examination of topics in Asian American studies through film and performance by and about Asian Americans. Class material draws from independent filmmakers, theatrical and artistic performances, as well as theoretical and critical texts on culture and diversity, gender, the diaspora, and ethnicity. **CC:** HUM, LCC **ISP:** AIS, AMS, FLM, GSWS

MLT 289 - Literature of the Mexican-American Border

Course Units: 1.0 This is a class in literature, film and essays from both sides of the Mexican-American border. This course is designed to give students an under-standing of the complexities of the history, culture and sense of identity of residents from both sides. The class will be discussion based and will focus on the close readings of novels, poems, short stories and plays. **CC:** HUL, HUM, LCC **ISP:** AMS, GSWS, LAS

MLT 293 - Made in New York: Puerto Rican and Dominican Transnational Identities in American Literature & Cinema

Course Units: 1.0 The course is a survey of the cultural production and representation of the Dominican and Puerto Rican communities in New York City from the late 1950's to the present. Through the analysis of literary texts (narrative, poetry, theater) and films, students are encouraged to reflect on the forging of transnational identities and other issues (race, cultural identity, gender and masculinities) related to these two Caribbean diasporic communities in the U.S., and on the politics of their representation within the American cultural economy. **CC:** HUL, HUM, LCC **ISP:** AFR, AMS, FLM, LAS

SPN 352 - Imagining Latinx Identities

Course Units: 1.0 This course is an introduction to contemporary US Latinx literature with a focus on Cuban-Americans, Dominican-Americans, Mexican-Americans/ Chicanxs, and Puerto Ricans. We will study representative works of various genres (narrative, drama, poetry, and film) within their cultural context. Our exploration of US Latinx production seeks to reflect on the plurality and diversity of (self-) representation and the various ways in which Latinx authors and artists imagine and construct their identities and communities in the United States. In addition to acquainting students with significant works of US Latinx literature, the course seeks to strengthen reading ability and sharpening writing and critical skills. Class discussions and writing assignments are in Spanish. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL **ISP:** LAS

SPN 406 - Film of the Mexican American Border

Course Units: 1.0 Through the study of 9 films, students will gain an understanding of cinematic techniques and the ways in which the directors of these films use them to convey differing perspectives of the Mexican-American border, with emphasis on the Mexican side. The films will be presented thematically in reference to the border as the perceived locus of perversion and violence, emigration/immigration, and identity. Readings for the course will come from texts on film, and from book chapters and articles. By the end of the term students will have a better understanding of the history and social dynamics of the Mexican- American border. They will also better understand how to "read" film through different theoretical approaches. They will also be able to discuss and write analytically about what a director does and why. **CC:** LCCS, HUM **ISP:** AMS, LAS

Philosophy

PHL 341 - The Contemporary Crisis of Truth

Course Units: 1.0 A study of 20th century European or American philosophies: phenomenology, existentialism, or analytic philosophy. **CC:** HUM **ISP:** AMS

Theater & Dance

ADA 140 - American Musical Theater and Dance

Course Units: 1.0 This course is an introduction to the American Musical from Vaudeville and Minstrel Shows to today's contemporary Broadway shows. Through lectures, video viewing, and workshops, students learn the historical background that focuses on the work of lyricists, composers, dancers, singers, choreographers, directors and producers. This unique American entertainment art form reflects American diversity and culture, changing times, values and trends. **Cross-Listed:** ATH 140 **CC:** LCC, HUM **ISP:** AFR, AMS

ATH 140 - American Musical Theater and Dance

Course Units: 1.0 This course is an introduction to the American Musical from Vaudeville and Minstrel Shows to today's contemporary Broadway shows. Through lectures, video viewing and workshops students will learn an historical background focusing on the work of lyricists, composers, choreographers, directors and producers. This unique American entertainment art form reflects American diversity and culture, changing times, values and trends. **Cross-Listed:** ADA 140 **CC:** LCC, HUM **ISP:** AMS

ADA 142 - Dance in America

Course Units: 1.0 An introduction to dance in America from Native American to contemporary diverse styles, approached through lecture, video viewing, and dance workshops. A voyage through time from the French Court with the birth of Classical Dance through the twentieth century with the development of Modern and Post-Modern Dance. Study of the advent of new music and dance with the African American heritage and American contributions towards social dancing. Special emphasis on historical background and international influences, studying the dancers, choreographers, traditions, and trends that influence the making of contemporary dance as an art and form of expression. **CC:** LCC, HUM **ISP:** AFR, AMS

Division II Social Science Courses

Africana Studies

AFR 100 - Introduction to Africana Studies

Course Units: 1.0 An interdisciplinary introduction to the field of Africana Studies. This course will examine the issues and perspectives-social, economic, political, historical, and cultural-of the peoples of Africa and the African diaspora. **CC:** LCC **ISP:** AIS, AMS, LAS

Anthropology

ANT 210 - The Anthropology of Poverty

Course Units: 1.0

This course places students in internships in local organizations dealing with poverty for several hours each week. In class, we use this experience to reflect on larger debates about poverty in the US. Why has urban poverty remained so entrenched in the United States, even amidst the unprecedented economic expansion of the postwar period? This course will seek to answer this question by exploring the relationships between race, public institutions, economic change and inequality within American society. In doing so, the course will examine the theoretical and practical dimensions of anthropology's engagement with poverty. We will begin by examining theoretical approaches for understanding the persistence of poverty in the United States, as well as the major policy frameworks that seek to reduce poverty. In addition, the course will cover anthropological critiques of these approaches and anthropological accounts of the everyday realities and struggles of poor people.

CC: LCC, SOCS, WAC, WAC-R, JCHF, JSPE **ISP:** AMS

ANT 227 - Policing the Americas: Law and Order in the Western Hemisphere

Course Units: 1.0 The Western Hemisphere is a violent place: drug wars in Mexico, street gangs in Central America, mass killings in the United States, and everywhere soaring rates of violent crime. What kinds of responses are emerging to problems of law, order, and public security in the Americas? How are these responses reshaping our societies? To what extent is the current situation the legacy of failed security policies? What is the role of the police and policing in all of this? This class adopts an anthropological perspective on the practice of policing. It looks at policing as the production of law and order-not just by local cops on the beat but also by actors involved in national and international security. The focus is on the Western Hemisphere and the influence of the United States on the ideals, institutions, and practices of policing. Key topics include: immigration, incarceration, deportation, frontiers, the movement of licit and illicit goods, democratic rights, and the regional impact of U.S. security initiatives including the Cold War, the War on Drugs, and the War on Terrorism. These topics will be grounded in studies of policing and police reform in the United States, Brazil, Colombia, Guatemala, and Mexico. By the end of the semester, students will have a working knowledge of critical issues in contemporary policing as well as the legal, socio-cultural, and economic factors behind the emerging models of police in the Americas. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AMS, LAS, LAW

ANT 237 - Gangs and Youth Violence

Course Units: 1.0 Bloods. Crips. Mara Salvatrucha (MS-13). The 18th St. Gang (M-18). Latin Kings. The names have become synonymous with senseless violence. Both feared and fetishized, the street gang became a focal point of urban politics in the United States and Latin America during the late twentieth century. Beginning with the neoliberal reforms of the 1980s, young, poor, minorities have found themselves at the center of a socio-economic crisis that has been accompanied by the rise of zero-tolerance policing. For the purposes of this class, the youth gang phenomenon will serve as a window in to the experience of racial, ethnic and economic marginalization under late capitalism. We will explore the context that gives rise to gang violence through a combination of anthropological, sociological, and historical approaches. By the end of the quarter, students will be familiar with the macro-social factors that shape both gangs and the politics of urban violence in the Americans. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AFR, AMS, LAS

ANT 245 - Sport, Society, and Culture

Course Units: 1.0 The comparative study of the role of sport in society. Topics include the meaning of play and sport; the evolution of sport; sport and socialization; ritual in sport; sport and gender; sport and race; sport and education; sport, conflict and violence; and sport and cultural change. **CC:** LCC, SOCS **ISP:** AMS

Economics

Note: Students must take ECO 101 as a prerequisite for any 200 level or above course in the Economics Department.

ECO 225 - Economics of Sin

Course Units: 1.0 Uses the tools of economic analysis to examine the markets for goods and services the sale of which is subject to public condemnation. Considers the impact and unintended consequences of economic policies toward these goods on market and social outcomes. Topics include the economics of transplantable organs, crime, addiction, intoxicants, marriage and sex. **Prerequisite(s):** ECO 101 **CC:** SOCS **ISP:** AMS, GSW

ECO 226 - Financial Markets

Course Units: 1.0 Study of the historical evolution, economic functions, and efficiency of financial institutions and markets, with an emphasis on the United States. **Prerequisite(s):** ECO 101 **CC:** SOCS, WAC **ISP:** AMS

ECO 231 - Urban Redevelopment

Course Units: 1.0 An examination of why the economic fortunes of cities rise and fall and what can be done to redevelop urban areas and improve their long-term vitality. Varied perspectives are considered and recent revitalization efforts in Schenectady, Saratoga Springs, and the Capital Region are analyzed. **Prerequisite(s):** ECO 101 **CC:** SOCS, WAC **ISP:** AMS

ECO 339 - Public Finance

Course Units: 1.0 Analysis of public sector expenditure and tax policy; efficiency and equity consequences of government spending and taxation; the nature of the public sector in the U.S., especially Social Security, education and the personal income tax; intergovernmental fiscal relationships. **Prerequisite(s):** ECO 241 **CC:** SOCS **ISP:** AMS

ECO 344 - Economics of Education

Course Units: 1.0 The economics of the education industry and education policy, and the relationship between education and economic performance. Topics include human capital investment, the production of education, the returns to education, financing education (using public or private resources), and school choice and education outcomes (student achievement, completion rates, lifetime achievement). **Prerequisite(s):** ECO 241 and ECO 243 **CC:** SOCS **ISP:** AMS

ECO 355 - Monetary Economics

Course Units: 1.0 What money has been and is, with study of relevant institutions, including the Federal Reserve and its policies; the bond market and interest rates; asset demand for domestic and foreign currencies; and monetarist, Keynesian, and Modern Monetary Theory (MMT) approaches to the role of money in macroeconomics. **Prerequisite(s):** ECO 241 , ECO 242 , and ECO 243 ; ECO 241 may be taken concurrently. **CC:** SOCS **ISP:** AMS

ECO 374 - Sports Economics

Course Units: 1.0 The application of economics to issues in sports. Sports topics include player salaries, free agency, discrimination, gambling, the Olympics, the Super Bowl, and the impact of stadiums on local economies. **Prerequisite(s):** ECO 241 and ECO 243 **CC:** SOCS **ISP:** AMS

ECO 387 - Seminar in Labor

Course Units: 1.0 The objective of this course is to learn how to do empirical research in labor economics using data drawn from the Current Populations Survey (CPS). The CPS is a monthly survey of about 50,000 households conducted by the Bureau of the Census for the Bureau of Labor Statistics and is the primary source of information on the labor force characteristics of the U.S. population. Using the CPS data many economists have written papers on topics such as gender/racial wage discrimination, economic performance of immigrants, labor union, job training, involuntary job loss, computer use, poverty, health insurance, and welfare. Students will write and present an empirical paper using data drawn from the CPS. In order to process the CPS data for their research, students will learn how to write programs in statistical software Stata. This would be an excellent prep course for students interested in writing a senior thesis on any topics in labor economics or applied microeconomics and analyzing large data sets. The main labor economics topics to be covered in this course include compensating wage differentials, human capital, labor mobility, immigration, and labor market discrimination. **Prerequisite(s):** ECO 241 and ECO 243 **CC:** SOCS, WAC-R **ISP:** AMS

Gender, Sexuality, and Women's Studies

Note: The following GSW courses must be approved annually by the American Studies Program Director.

GSW 100 - Introduction to Gender, Sexuality, and Women's Studies

Course Units: 1.0 This course is a transdisciplinary introduction to lesbian, gay, bisexual, transgender, and queer (LGBTQ+) studies. We will explore histories of sexualities; forms of systemic and structural oppression including heterosexism, homophobia, and transphobia and resistance to them; violence against LGBTQ+ people; intersectional queer activism throughout history; diverse experiences of sexuality, desire, and identity; and representations of LGBTQ+ people and experiences in literature, art, and popular culture. Our approach to class material will be intersectional, focusing on the connection between multiple identity components including, but not limited to, race, gender, class, and sexuality. **CC:** HUM, SOCS, JCHF **ISP:** AMS, GSW

GSW 495 - Capstone Course on Theories of Gender, Sexuality, and Women

Course Units: 1.0 A required interdisciplinary course designed as the culmination of the major or minor. This course reinforces and provides a coherent perspective on the major issues in gender studies and affords an opportunity to reflect upon the importance of the chosen major and/or minor focus in light of these issues. The topic of the capstone course varies from year to year; this year's will be Women's Rights in the United States in the fall and Feminist Film in the spring, cross-listed as EGL 304 and PSC 339 , respectively. **Prerequisite(s):** GSW 100 **CC:** SOCS, WAC, JCAD, JCHF **ISP:** AMS, GSW

History

HST 101 - History of the United States to the Civil War

Course Units: 1.0 Political, economic, and social developments in the colonial and early national periods. **CC:** SOCS **ISP:** AMS

HST 102 - History of the United States Since the Civil War

Course Units: 1.0 Political, economic, and social developments: continuity and change in modern America. **CC:** SOCS **ISP:** AMS

HST 113 - The Origins of American Society

Course Units: 1.0 The evolution of American society from its 17th-century origins through the aftermath of the Revolution. **CC:** SOCS **ISP:** AMS

HST 114 - The American Revolution

Course Units: 1.0 The causes and consequences of the American Revolution (1763-1815). **CC:** SOCS **ISP:** AMS

HST 116 - Age of Jackson

Course Units: 1.0 An examination of the United States in the turbulent period from 1815-1845, surveying the second party system, various utopian and reform movements, the cult of domesticity, and other wrenching transformations instigated by the market revolution. **CC:** SOCS **ISP:** AMS

HST 118 - Civil War and Reconstruction

Course Units: 1.0 An examination of the causes of the deepening sectional crisis; the political, economic, and social reasons for Southern secession; the move toward emancipation as a Northern war aim; the impact of the war on women and men, with special attention to geographic location, race, and class; and the experience of Reconstruction in the South. **CC:** SOCS **ISP:** AMS

HST 120 - The Emergence of Modern America, 1877-1918

Course Units: 1.0 The impact of urbanization and industrialization on the creation of the modern United States, 1890-1920. **CC:** SOCS **ISP:** AMS

HST 121 - The Depression and New Deal

Course Units: 1.0 The years between the end of World War I and the beginning of World War II witnessed not only a dramatic contrast between the prosperity of the 1920s and the Great Depression of the 1930s, but also a fundamental reordering of America's political system forged during Franklin D. Roosevelt's New Deal. This course will examine the crisis and transformation of the American economy and political system during the 1920s and 1930s, and their impact on Americans of all walks of life. **CC:** SOCS **ISP:** AMS

HST 123 - Postwar America and the Origins of the Cold War

Course Units: 1.0 The stand-off between the United States and the Soviet Union permeated the politics and culture of the United States from the end of the Second World War through the early 1960s. This course will explore the origins of the Cold War, the terms on which it was fought, and the degree to which it imposed a political and cultural "consensus" on the United States. **CC:** SOCS **ISP:** AMS, REE

HST 124 - Monuments, Museums, and Movies: Introduction to Public History

Course Units: 1.0 This course will provide an overview of public history, defined as the presentation of history to a general public audience. Students will learn the theory, methods, and practice of public history in its various dimensions, including museums, monuments, historic sites, and films; they will explore the controversies that emerge in public history settings, including the battle over the Enola Gay, the Holocaust Museum, and commemorations of September 11th; and they will engage in a public history project in the Schenectady area. **CC:** SOCS **ISP:** AMS

HST 125 - Coming Apart?: America in the Sixties

Course Units: 1.0 A study of the breakdown of political and cultural consensus between 1956 and 1974. We will examine the degree to which counter-cultural and racial politics of the period successfully challenged the dominant political culture on issues of war, race, and gender. **CC:** SOCS **ISP:** AMS

HST 126 - Since Yesterday: United States History, 1974-2000

Course Units: 1.0 If the United States "came apart" in the 1960s, did it come back together in the 1970s and 1980s, or something else? This course looks at the emergence of new social movements (e.g., the women's and environmentalist movements), the rise of the "new right," the Reagan "revolution" in domestic policy, and American foreign policy from the fall of Saigon to the collapse of the Soviet Bloc. **CC:** SOCS **ISP:** AMS

HST 128 - The American Jewish Experience

Course Units: 1.0 Jews arrived in Britain's American colonies in 1654. In the space of 350 years their numbers increased dramatically and they made significant contributions to a plethora of areas in American society. Jews and

Judaism also experienced significant changes through the encounter with the United States. But for all the gains in status and achievement, there are those who speak of a problematic future for American Jewry. **CC:** SOCS **ISP:** AMS, REL

HST 129 - History of Sports in America

Course Units: 1.0 Fields of battle (military, political, economic, and social) generally characterize the teaching of American history. Throughout times of conflict, however, it has often been the fields of American sport which have provided distraction, respite, and relief from these struggles. Meanwhile during times of peace, the fields of sport have contributed more than leisure and entertainment; they have reflected the American people's lives, hopes and dreams. Sport, in other words, has been and continues to be an active mediator in America's life, and a lens through which we can examine the broader contexts of American history. **CC:** SOCS **ISP:** AMS

HST 131 - African-American History 1

Course Units: 1.0 The purpose of this course is to help you better understand both the role of race and slavery in early American history and the contributions of African-Americans to society and culture in America before 1877. The course will examine the lives of black Americans, enslaved and free, from the arrival of the first Africans in the New World through Reconstruction. It will also address more abstract ideas about cultural and "racial" differences. Throughout this course, you will be asked to consider the question "which came first, racism or slavery?" **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 132 - African-American History 2

Course Units: 1.0 This course covers the Black experience in America from the end of the Civil War until the present day. It will generally proceed chronologically, but there may be some overlap as it tries to cover certain themes, such as culture, oppression, resistance, and identity. Throughout the course students will be asked to consider the question to what extent is the African-American experience unique and to what extent is it representative of the "American" experience. **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 135 - Latinos In/As U.S. History

Course Units: 1.0 What does U.S. history look like if we consider it a Latin American nation? This course explores the history of El Norte through the eyes of border-crossing, indigenous communities, Spanish settlers in the South and West, and the Latin American and Caribbean immigrant populations that have made their homes across the country since its founding. We end with a particular focus on Latin American and Latinx communities in 21st-century New York. **CC:** SOCS **ISP:** AFR, AMS, GSW, LAS

HST 209 - Race, Gender, and Nationalism in American Sports

Course Units: 1.0 This course examines the development and the history of US sports from the 19th through the 21st centuries with special focus on sports' bond with nationalism, race, and gender. Modern sports cannot escape its association with US emergence in international affairs at the end of the 19th century. Intertwined with the process of establishing national identity were muscular Christian notions about masculine prowess and belief in women's natural physical limitations accompanied by a persistent belief in the fundamental superiority of the white race and its obligation to dominate over "inferior" races and cultures. As surely as sport became associated with American identity, nationalism, gender, and race became integral defining characteristics of sport. This course will be driven primarily by reading and discussion. Lectures will be used to supplement and place the readings in historical perspective, but the focus will be on reading, comprehension, and analysis. Students are encouraged to bring a variety of pre-occupations, pre-conceived ideas, and personal viewpoints to the course; they will be expected to give oral and written expression to their analysis and perspectives. **CC:** SOCS **ISP:** AFR, AMS, GSWS

HST 211 - American Indian History

Course Units: 1.0 An overview of the diverse experiences and histories of the native peoples of North America in the last five centuries. Particular attention will be paid to native peoples' various strategies to respond to change and challenges to native autonomy and communities. **CC:** LCC, SOCS **ISP:** AMS

HST 212 - "Remember the Ladies": American Women to 1900

Course Units: 1.0 An examination of changing gender roles from 1600 to 1890. Topics include work, family, civil and legal identity, and the impact of race, class, and geographic location on women's experiences. **CC:** SOCS **ISP:** AMS, GSWS

HST 213 - The New Woman: American Women from 1900

Course Units: 1.0 An examination of changing gender roles from 1890 to the present. Topics include the evolution of feminism, and the impact of race and class on women's experiences. **CC:** SOCS **ISP:** AMS, GSWS

HST 216 - The Writing and Ratification of the Constitution

Course Units: 1.0 A study of the major influences on the US Constitution, how it was written, and how it was adopted. **CC:** SOCS **ISP:** AMS

HST 221 - Popular Culture and American History

Course Units: 1.0 The popular arts and entertainments of the late nineteenth and twentieth centuries are placed in historical context and studied as a means to rediscover the intellectual and emotional life of ordinary Americans. **CC:** SOCS **ISP:** AMS

HST 222 - Other Voices: Women in the History of American Ideas

Course Units: 1.0 The contribution of women to the development of American intellectual and cultural life, from Charlotte Perkins Gilman to Angela Davis. **CC:** SOCS **ISP:** AMS, GSWS

HST 223 - Twentieth Century American Intellectual History

Course Units: 1.0 An overview of the major social and political issues that shaped and unshaped American liberal thought from John Dewey to Andrea Dworkin. **CC:** SOCS **ISP:** AMS

HST 225 - American Environmental History

Course Units: 1.0 This course aims to give students the knowledge and the tools to think critically about how history has shaped the present state of the earth and human relationships with it. It focuses on the history of man's interaction with nature on the North American continent, with a particular focus on the area that would become the United States, from precolonial times until the present. **CC:** SOCS **ISP:** AMS, ENS

HST 226 - A Novel View of US History

Course Units: 1.0 This course will examine the broad scope of American history from colonial times to the present as it has been revealed in American literature and novels. Employing principally primary source literature, the course will

introduce students not only to American history but to an understanding of important events and developments as comprehended by those who experienced those events or who were contemporary interpreters of those events. Supplemented by lectures on the facts of historical events, primary source works will be used to re-introduce personality and complexity to the historical context in order to stimulate student understanding of the American experience. Students will be encouraged to analyze and examine the variety of outlooks that propel history, while also learning an appreciation for the value and potential of personal scrutiny, insight, and perspective. Primarily driven by readings and discussion, lectures will be used to supplement and place the readings in historical context; however, the focus will be on reading, analysis, comprehension, and communication. **CC:** SOCS **ISP:** AMS

HST 227 - Interviews with History: An Introduction to Oral History

Course Units: 1.0 What was history like for men and women who lived it? Oral History is the practice of collecting stories and information about the past from individuals. In this class, students will read, listen to, and watch oral histories; they will learn theories of memory as they relate to oral history; they will discuss the ethical and legal issues surrounding oral history; and they will learn how to perform, record, and edit an oral history interview. Students will spend a significant portion of their time working on individual projects wherein they will conduct and interpret oral history interviews and write an essay based on that work. **CC:** SOCS **ISP:** AMS

HST 228 - History of Union College

Course Units: 1.0 The history of Union College is broad and impressive; however, tight schedules while rushing to class in Butterfield or Bailey, a meeting in Hale House or Feigenbaum, a conference or guest lecture in the Nott, or an event at Achilles makes it easy to overlook that history. Since 1795, there have been wars, economic expansions and depressions, internal and external political conflicts, and social revolutions; through it all. Union has not just survived but endured, while remaining committed to the progressive ideals of its founding. This course will investigate the history of the modern, living institution that is Union today, that is, the physical realities of the college (grounds, buildings, and landscape) as well as the academic, athletic, and social environments that provide life and meaning for all who have entered its gates. Understanding the history of Union gives students an opportunity to shape the future - as Union and its alumni have shaped the past. **CC:** SOCS **ISP:** AMS

HST 229 - The Adirondacks and American Environmental History

Course Units: 1.0 The Adirondack region of northern New York Slate has been a proving ground for shifting American attitudes toward the environment, from early colonial (ears of wilderness, to intensive resource exploitation, and to efforts to conserve natural resources and preserve distinctive wilderness areas. This course will examine Adirondack environmental history and place it in the context of broader American environmental history. It will leverage Union College's proximity to the region, and the resources of the Union College Kelly Adirondack Center, to offer students both intellectual and experiential engagement with the history of this distinctive place. **CC:** SOCS **ISP:** AMS, ENS, STS

HST 231 - The Civil Rights Movement

Course Units: 1.0 A survey of the civil rights movement, assessing the early campaigns of the 1940s, the development of black grassroots organizations in the 1950s and 1960s, and the impact of black nationalist consciousness in the late 1960s and early 70s. **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 232 - History of New Orleans

Course Units: 1.0 This class examines the history of New Orleans from its founding in 1718 to the present day. The course will proceed chronologically and will focus on the recurring and interrelated themes of Race, Geography, and

Culture. In the process we will unravel the extent to which the crescent city is or is not representative of the history of urban America in general. **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 246 - Prehistory of Risk

Course Units: 1 This class looks at how European society tried to tame chance and comprehend its whims before and after the arrival of the mathematics of probability around 1650. How did people move from consulting oracles to developing the insurance business? Risk is examined as a historically shaped experience in various areas of its manifestations including oracles, gambling, insurance, philosophy, and theology. **ISP:** AMS

HST 289 - Global Indians: South Asian Identity in the United States

Course Units: 1.0 The Indian diaspora today constitutes an important, and in some respects a unique force, in world culture and in the United States. We will begin by studying Indians migrating worldwide through the nineteenth and twentieth centuries with a focus on the United States to pose critical questions about identity, race, religion, gender, cultural assimilation and change. **CC:** LCC, SOCS **ISP:** AMS

HST 312 - "Bonds of Womanhood": History of Women's Rights in the United States

Course Units: 1.0 This course examines major themes in the study of women's rights in the United States. Topics include constitutional and legal rights changes over time; the interplay of gender with race, class, and sexuality involved in "rights" movements since the nineteenth century; and current controversies over women's rights. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS **ISP:** AMS, GSWS

HST 315 - Race and Constitution

Course Units: 1.0 One purpose of this course is to help you better understand the role of race in the legal, constitutional, and political history of the United States. Issues regarding race and slavery have been a constant source of constitutional debate (in one way or another) from the drafting of the Constitution until the present day. Focusing on racial issues, this course examines the historical context in which the Constitution of the United States was drafted and ratified and explores the various methods by which its meaning has changed since 1787. Therefore, this course is about both race in America as well as the Constitution and Constitutional interpretation. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS, WAC **ISP:** AFR, AMS

HST 322 - Slavery and Freedom

Course Units: 1.0 Examines major themes in the historiography of American slavery. Topics include the relationship between racism and the growth of slave labor, the development of African American slave culture, the nature of the enslaved family, and the transition from slavery to freedom. **Prerequisite(s):** any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AMS

HST 323 - Race and Revolution

Course Units: 1.0 This course examines the American Revolution and the Haitian Revolution. With regard to the former, it addresses the "Jefferson question" - that is, how could the author of the Declaration of Independence be the owner of over 200 slaves. Therefore, it deals with competing interpretations in the Early American Republic of the Ideology of "liberty" and "equality." Next, the course delves into the far more radical Haitian Revolution, the only successful slave revolution in history. It will deal with the influences of the American and French revolutions on the

French New World colony of St. Domingue that made the Haitian revolution possible. Finally, the course examines the impact of the Haitian Revolution on slavery and the anti-slavery movement in the United States. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AFR, AMS, LAS

HST 324 - Race in American Memory

Course Units: 1.0 "The struggle of man against power," wrote Milan Kundera, "is the struggle of memory against forgetting." This course will examine that struggle as it has taken place in the United States around the issue of race. How have Americans as a nation chosen to remember events that involved race? How and by whom were these collective memories constructed? In what ways were they contested? How have they changed over time? We will explore these issues focusing on such phenomena as Indian removal, slavery, the Civil War, Jim Crow, Japanese internment and World War II, and the Civil Rights movement, examining depictions in public history and popular cultural forms, including memorials, museums, battlefields, literature, and film. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 325 - War in American Memory

Course Units: 1.0 In recent years, historians have become increasingly interested in collective memory: its construction, its evolution, and the ways in which it has been used as an instrument of power. Collective memories of wars in particular work to inform ongoing debates about national identity. This course examines the ways that Americans have remembered their nation's wars. How were these collective memories constructed and in what ways were they contested? What do they reveal about social. political, and economic tensions? To what ends were these collective memories mobilized? How have they changed over time, and how do we as historians understand those changes? In this class we will explore traditional expressions of war memories such as monuments, memorials, and battlefields as well as cultural expressions of these memories in art, literature, and film. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS **ISP:** AMS

HST 331 - Representing America: United States History in Film

Course Units: 1.0 This course compares the representation of American history in Hollywood film with the reconstruction of our past by scholars. Each week students will critically examine the historically-based films of D. W. Griffith, John Ford, Frank Capra, and others. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS, WAC **ISP:** AMS, FLM

HST 224 - Transnational America

Course Units: 1.0 The United States is now the center of global production, yet it is also swept by the forces of international cultural change. How did we reach that position and what consequences does it have for our national integrity, our identity as Americans, our way of life, and our relationship to other nations and peoples? Students read recent literature on the history of transnationality and globalism as it has affected the economy, ethnic identity, cultural production (in literature and film), and international relations of the United States in the twentieth century. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AMS

HST 333 - Hollywood Film

Course Units: 1.0 In studying the history of Hollywood film, then, we will study one of the most important elements of American culture as seen at home and from abroad. Our objectives in this course will be to get behind the cliches and platitudes about the Hollywood experience to its more complex and substantive history. We will learn the basic chronology of American dramatic film history, the tools of historical film research and some of the methods of technical film analysis. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS **ISP:** AMS, FLM

HST 336 - The Roosevelt Era

Course Units: 1.0 This course will focus on major interpretive issues that surround the presidency of Franklin Delano Roosevelt. We will study how historians have disagreed, over time, on issues such as: Was FDR a raving radical or the best friend of big business? Was the New Deal a good deal or a raw deal for African Americans? Was World War Two a "good war"? Could FDR's administration have done more to prevent the Holocaust? This is a reading-intensive, discussion-centered class that requires active student engagement. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS **ISP:** AMS

HST 411 - Seminar in US History: History of New York City

Course Units: 1.0 New York has occupied the center of American financial, cultural, and political life since the Civil War. This course will trace the history of New York City from the early 19th century to the end of the 20th, as it rose to become the preeminent urban center of the United States and, for some, the world. We will look at the city's political, social, and cultural history in all its dimensions, including its service as the primary port of disembarkation for European immigrants, its role as a cultural capital and its history as a center of political dissent. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS, WAC, WAC-R **ISP:** AMS

HST 412 - Seminar in US History: The Old South

Course Units: 1.0 This class examines the history of the Old South, focusing on the period from 1800 to 1861. The lectures and readings cover a variety of topics, including myths and facts about southern society and culture, slavery and the strengthening of southern distinctiveness, and political events that eventually lead to the creation of a separate (short-lived) southern nation in 1861. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS, WAC, WAC-R **ISP:** AFR, AMS

HST 413 - Seminar in US History: Disasters in American History

Course Units: 1.0 This research seminar will examine the American experience with disasters over the course of the past three centuries. We will study how natural and technological disasters have impacted American society in different eras; how explanations for the cause of disasters have changed over time; how factors such as race and class have influenced vulnerability to disaster; and how charitable and governmental responses to disaster have evolved over the course of American history. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS, WAC, WAC-R **ISP:** AMS

HST 414 - Seminar in US History: Lincoln: Politician to Pop Icon

Course Units: 1.0 Abraham Lincoln has received perhaps the most attention of any U.S. president in both scholarly studies and popular portrayals. Why? This course examines Lincoln during his lifetime: as a man coming of age in Jacksonian America, as an itinerant lawyer, as a fond father and troubled husband, as a politician during a major change in the party system, and as a wartime president. Furthermore, we consider Lincoln's post-assassination career from martyred president to memorialized and criticized symbol of civil rights to motion picture subject. Students will propose, research, and write a seminar paper that examines an aspect of Abraham Lincoln as a major figure in American history and culture. **CC:** SOCS, WAC, WAC-R **ISP:** AMS

Political Science

PSC 111 - Introduction to US Politics

Course Units: 1.0 A broad overview of the operation and issues of central concern in the study of U.S. politics. Particular attention is paid to evaluating the U.S. governing system in relation to major theories of political power, such as elitism, pluralism, and populism. In examining these and other broad concepts there is a focus on the foundations, institutions, and linkage mechanisms (political parties, media, etc.) that play a critical role in U.S. politics. Depending on the instructor, topics covered often include: the founding period, U.S. political culture, civil rights and liberties, money and politics, campaigns and elections, the role of mass media, parties and interest groups, politics in the post 9/11 era, and public policies focusing on crime, foreign affairs, the environment, poverty, health care, and war. **CC:** SOCS, JSPE **ISP:** AMS

PSC 160 - Presidential Elections

Course Units: 1.0 This course will be offered every four years, in the fall term of U.S. presidential election years. The course will consist of an in-depth examination of the presidential election. Candidates, developments, and events of that year will be analyzed, as well as placed within their broader historical and conceptual contexts. **CC:** SOCS **ISP:** AMS

PSC 235 - African American Political Thought

Course Units: 1.0 This course will introduce students to the critical and constructive dimensions of African American political thought. We will assess the claims that Black Americans have made on the polity, how they define themselves, and how they have sought to redefine the basic terms of American public life. **CC:** SOCS, WAC **ISP:** AFR, AMS, GSWS

PSC 237 - Music and Politics

Course Units: 1.0 This class explores the multiple relationships between music and politics with a specific focus on the following dimensions: (1) the use of music as a lens to perceive the world, to frame injustices, to inform political discourse, to raise consciousness, and to mobilize public opinion; (2) the political context in which critically significant music is produced; (3) biographical details of artists that bring understanding to the art they produce; (4) the impact of class, race, ethnicity, and gender on music; (5) the interpretation of political messages found in music; and (6) the intentional and unintentional political consequences of popular music. **CC:** SOCS **ISP:** AMS, LAS

PSC 239 - American Political Thought Through the Progressive Era

Course Units: 1.0 Political thought in America from the colonial period until World War I with an emphasis on evolving political, social, cultural, and intellectual perspectives on enlightenment values, nationalism, slavery, the rise of the industrial economy, the political machine, and America's changing role in the world. **CC:** SOCS **ISP:** AMS

PSC 240 - Comparative Ethnic and Racial Politics

Course Units: 1.0 An introduction to the trends and patterns of ethnic conflicts in the contemporary world. Issues pertaining to the rise of nations; theories of ethnic mobilization; the attempt to build general, cross-national explanations; and current efforts to solve ethnic conflict. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS **ISP:** AMS, REE

PSC 246 - Asian Development: Industrialization Beyond the West

Course Units: 1.0 How did some Asian countries become the first non-Western countries to achieve high-income status, near elimination of poverty, a highly educated and healthy population, leading edge technology and in some cases robust democracies and even admirably equal distributions of wealth? And how did they come to compete with the West, often on terms set by Western countries, despite the West's much earlier industrialization, and the vast geographic and cultural distances? Are answers to be found in politics and institutions? Culture? Resources and

demography? Historical effects of imperialism? Regionalism? After a brief comparison of pre-modern China and Europe, the course focuses on the 'miracle' of Japanese industrialization from the late 19th to early 20th century, as well as Japan's combination of industrialization and militarization on the road to World War Two. This is followed by post-World War Two Japan and the four Asian Tigers (South Korea, Taiwan, Hong Kong and Singapore), before focusing on the return of China since the 1980s, and Southeast Asia within the Asian region. This is a reading intensive course, though no background in Asia, political science or economics is required **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AIS, AMS

PSC 251 - American Foreign Policy

Course Units: 1.0 This course will provide an overview of the history of US Foreign Policy from the Cold War to the post-Cold War era. The course focuses on major policy options, issues in the Middle East, reset to Asia, and the choices between multilateralism and hegemonic dominance. The course emphasizes policy-making, especially the role of the President and Executive, in struggles with Congress, and the role of various NGO's, think tanks, and other lobbyists in the formation of foreign policy outcomes. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 260 - Policy Making and American Society

Course Units: 1.0 The process through which public policies are originated, shaped, adopted, and applied at all levels of government in the U.S. and the impact of public policies on American society. Policies such as crime, immigration, gay rights, abortion, the environment, smoking, and others are used as case studies to examine the policy process. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS

PSC 261 - Public Opinion

Course Units: 1.0 An overview of public opinion in the United States. Topics include the content of citizens' opinions toward a wide range of political topics, the sources of people's opinions, and an evaluation of whether the opinions of the public matter (for policy, for governance, and for democracy). The course material is structured around important normative questions, such as: What is the role of citizens in a democratic society? Are citizens pliable? Do citizens organize their political thinking? Do citizens demonstrate and endorse democratic basics? **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 266 - Women and Politics

Course Units: 1.0 The political, social, and economic circumstances of women in the U.S. Topics include history of women's rights, the gendering of politics, women as political actors (voters, candidates, and government officials), and politically relevant differences across gender identities. Issues include gender equality (in the workplace, education and athletics), reproductive rights, and violence against women, among others. Special attention to the intersection of gender with other identities. **Prerequisite(s):** PSC 111 or SOC 100 or sophomore standing **CC:** JSPE **ISP:** AMS, GSWS

PSC 268 - Electoral Politics

Course Units: 1.0 Examination of elections in the U.S., including presidential, congressional, and state elections. Specific topics include the democratic theory of elections, candidate strategy, voter decision making, identity politics, campaign finance, and the electoral roles of the media, political parties, and campaign consultants. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 269 - Media and Politics

Course Units: 1.0 Major trends in U.S. media, politics, and political communication. The focus is on media coverage of politics as well as effects of media on the public, across various types of media sources. These will include the traditional news media, partisan media sources, and social media. The larger context is the role of media in a democratic society. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, WAC **ISP:** AMS

PSC 270 - CIA and the Art of Intelligence

Course Units: 1.0 Provides an historical background to intelligence and espionage, and offers perspectives on present day secret intelligence operations of world powers in support of their national security objectives. Discussions on intelligence analysis, evaluation, human and technical intelligence, cryptography, counter-intelligence, moles, various kinds of overt operations, US foreign policy issues and goals. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, REE

PSC 272 - The Environment, Energy, and US Politics

Course Units: 1.0 Examination of how politics and policymaking affect the air we breathe, the water we drink, and the land we live on. This course will explore key U.S. environmental issues and their scientific underpinnings as well as the connections between these issues and our collective use of natural resources. The course will review major pieces of federal environmental law in the United States and address the policy considerations, justifications, and regulatory frameworks underlying them, as well as the effectiveness of these laws in achieving a healthier environment. The course will also examine the respective roles of Congress, the executive agencies, and the courts in determining environmental policy. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, STS

PSC 273 - The Supreme Court and Judicial Politics

Course Units: 1.0 An investigation of the judicial branch of government in the U.S. that focuses on the role of judges, the functioning of courts, and leading contemporary controversies in the judicial system. Among the primary concerns of this course are: the structure of the American Judiciary, judicial selection processes, how cases originate and move through the judicial system, how judges think about and reach decisions in the cases, and the role law plays in society. In exploring these topics many actual Supreme Court cases are dissected, focusing on such issues as: gay rights, pornography, rights of disabled citizens, the rights of those accused of crimes, and free speech over the Internet, to name only a few areas. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, LAW

PSC 277 - Capital Region Political Internships

Course Units: 1.0 This class enables students to become politically active and/or gain political experience by working for elected officials, government agencies, election campaigns, interest groups, non-profit organizations, lobby firms, etc. Students draw on their internship experience and related academic work to reach a better understanding of the complexities and dynamics of politics at the state or local level. Students are permitted to enroll in this course twice, although the course will count toward the Political Science major only once. **Prerequisite(s):** Sophomore standing and permission of the instructor. **CC:** SOCS **ISP:** AMS, ENS **Note:** This course does not count towards the PSC portion of an ID major.

PSC 280T - Washington, D.C. Internship Program

Course Units: 1.0 A 10-week spring term in Washington, D.C. wherein each student is an intern either on the Hill, with a Nongovernmental agency (NGO), or with some other political, social, cultural, or scientific organization in D.C.. The internship receives one course credit. The second course is a seminar focused on a specific political theme (examples from past years include national security and foreign policy) introducing students to the policy, partisan and ideological debates within Washington. The third course is Washington, D.C.: Cultural and Political Spaces in America's Capital

(AMS 251T). **Prerequisite(s):** Sophomore standing and permission of the instructor. These courses may not be taken as pass/fail. **ISP:** AMS **Note:** The internship does not count towards the PSC portion of an ID major.

PSC 282 - Health Politics and Policy

Course Units: 1.0 This course will examine the subject of health care policy in the American political system. Students will learn about the roles and functions of key actors, institutions, concepts, and principles as part of a broad overview of American health politics. From this foundation, we will develop a theoretical and practical framework to ground our analysis of current health policy issues and debates. Topics will include finance, insurance, Medicare/Medicaid, the Patient Protection and Affordable Care Act (aka "Obamacare"), prescription drug regulation, private markets, the public interest, ethics, and the role of government. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, WAC **ISP:** AMS, STS

PSC 283 - Social Movements, the Environment and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** SOC 270 **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **ISP:** AMS, ENS, STS

PSC 284 - Political Sociology

Course Units: 1.0 Issues of political power, domination, and legitimacy from a sociological perspective. Topics include the creation and maintenance of political power, the role of legitimacy and the impact of political socialization. **Cross-Listed:** SOC 240 **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AFR, AMS, GSWS

PSC 286 - The Modern Presidency

Course Units: 1.0 Case studies in Presidential leadership and administrative styles, including those of FDR, Eisenhower, Kennedy, Johnson, Reagan, Clinton, Obama, and Trump. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 287 - The Contemporary Presidency

Course Units: 1.0 The rapidly-changing Trump-era presidency in contemporary and historical context: recent developments in the institutional and narrative-based presidency, with a background examination of the administrations from Reagan through Trump. **CC:** SOCS **ISP:** AMS

PSC 289T - New Hampshire Primary Mini-Term

Course Units: 1.0 One of the most important events in every presidential election cycle is the New Hampshire primary. In this mini-term, students will analyze the New Hampshire primary through formal coursework (readings, discussions, papers, etc.). They will also experience the primary by spending three weeks in New Hampshire in late November-early December, shortly before balloting occurs early in the following year (a presidential election year). While in New Hampshire, students will volunteer with a candidate campaign organization, media outlet, or other campaign-related group. In addition, students will attend campaign events and guest lectures (by state officials, campaign staff members, journalists, scholars, etc.). This course is offered every four years consistent with the presidential election cycle. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **ISP:** AMS

PSC 333 - Twenty-First Century American Political Thought

Course Units: 1.0 An exploration of political thinking in regard to the multiple crises the United States faces in the 21st century. Potential topics include threats to democracy in the United States by right wing groups and White Supremacy; specific challenges of structural racism, gender inequity, police violence, guns; social movements such as Black Lives Matter, #metoo, the Sunrise Movement; and the historical meanings of individualism, diversity, freedom, imperialism, and Western expansion in the US. **CC:** SOCS **ISP:** AFR, AMS, GSW

PSC 340 - Politics and Film

Course Units: 1.0 This course explores political themes through the rigorous viewing of feature films and documentaries from the United States and abroad. Films present differing perspectives on the subject. Themes include war, revolution, counter-revolution, role of the individual in social conflict, and US intervention in foreign lands. Class requires critical analysis of the films, supplementary readings, and six conceptual-analytical papers. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, FLM

PSC 355 - Defense Policy

Course Units: 1.0 A deeper understanding of US Defense Policy in relation to current trends in the international threat environment. Examines the historical roots of US defense policy with a focus on the impact of isolationism, exceptionalism, and the Cold War on those policies. The policy-making process itself will be examined highlighting the influence of the realist paradigm, as well as the various organizational inputs, which help to shape the policy outcomes. A look at the post-Cold War period with emphasis on the impact of 9/11 and the proliferation of weapons of mass destruction on changes in US policy. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 364 - Law and Film

Course Units: 1.0 This course uses the medium of film as a springboard to introduce and explore concepts in legal theory, American legal culture, and the exercise of public and private power through the legal system. Specific topics of discussion include law as morality, higher versus positive law, law and gender, and the heroic lawyer mythology. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, WAC **ISP:** AMS, FLM, LAW

PSC 365 - Law, Society, and the Wire

Course Units: 1.0 HBO's The Wire is often hailed as one of the greatest television series. During its run, critics compared it to a novel or epic poem. Along with its gritty portrayal of inner city decay and the lives lived in this environment, the crime drama convincingly portrays communities and their institutions. The Wire's depiction of law is among its most nuanced and provocative features. The show easily slips among the black letter law, the law on the street, and informal law-like systems that exist among communities that do not fully subscribe to the norms of the state. This course will use the portrayal of law in The Wire to address some of the following questions: What is law? Is law only the domain of the state? What is the relationship between law and power? Is violence inherent in law? Is law inherently oppressive? If so, how do we reconcile oppression with democratic practice and human rights? **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 369 - Seminar: US Politics

Course Units: 1.0 Selected topics in U.S. politics. Content will vary from year to year. Preference to sophomore and junior political science majors. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 370 - Constitutional Law

Course Units: 1.0 An examination of the Constitutional tradition in the United States, focusing upon the structure and powers of the federal government. Topics and themes include the power of the courts to interpret the laws and the Constitution, the power of the federal government and the significance of "states' rights," federal government intervention in matters of "commerce" or economics, and the nature and expansion of executive power, especially in the area of national security. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **CC:** SOCS **ISP:** AMS, LAW

PSC 371 - Civil Rights and Civil Liberties

Course Units: 1.0 Considers the protections afforded to individual rights and liberties by the U.S. Constitution and the Bill of Rights. Topics include freedom of speech and assembly, the right to privacy, religious freedom, equal protection and discrimination, and the due process rights of those accused of crimes. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, JCHF, JSPE **ISP:** AMS, LAW

PSC 434 - Feminist Film

Course Units: 1.0 Using 10 films as our "texts" we will examine the role of women in society, the diversity of women's lives, the impact of gender roles in various cultural contexts, the possibility of alternative sexualities and ways of living, and whether we can say what constitutes a "feminist film." The course is focused on discussion of, and writing about, the films but includes analysis of feminist political theory and feminist film theory to provide tools for better interpretation. **CC:** SOCS **ISP:** AMS, FLM, GSWS

Sociology

SOC 212 - The American Family and Cross-Cultural Perspectives

Course Units: 1.0 This course examines historical and contemporary patterns of American family from cross-cultural perspectives. We explore the ways in which race/ethnicity, social class, gender roles, conflict and crisis, and the media influence family life. **Prerequisite(s):** SOC 100 **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AFR, AMS, GSWS

SOC 222 - Schools and Societies

Course Units: 1.0 Sociological analysis of education as an institution over time and across societies. **Prerequisite(s):** SOC 100 **CC:** SOCS, JSPE **ISP:** AMS

SOC 223 - Sociology of Religion

Course Units: 1.0 The role of religion and religious phenomena from an institutional, organizational, and individual perspective in contemporary and historical context, exploring the interplay between the public and private spheres. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS, REL

SOC 224 - Sociology of Community

Course Units: 1.0 How communities and their residents respond to external environments and internal organization. A series of case studies of urban, rural, and suburban communities and their effect on social behavior is a focus. **Prerequisite(s):** SOC 100 **ISP:** AMS

SOC 230 - Sociology of the Black Community

Course Units: 1.0 This course is an introduction to African American society as revealed in the empirical literature of social sciences. Teaching and Learning in the context of this class will be multidimensional. You will learn about social structure and inequalities through readings, lectures, discussions, popular media examples, and field trips. Using these pedagogical strategies, our class will work as a learning community to explore contemporary issues relating to African American experiences. **Prerequisite(s):** SOC 100 **CC:** LCC **ISP:** AFR, AMS

SOC 231 - Sex and Gender in American Society

Course Units: 1.0 An examination of gender and the social context of the behavior of men and women in contemporary American Society. **Prerequisite(s):** SOC 100 **ISP:** AMS, GSWS

SOC 233 - Race, Class, Gender, and Sexuality

Course Units: 1.0 The issues of gender, race, and class as organizing principles within sociology. The course draws broadly from the critical tradition, which focuses on issues of power, control, opportunity, gender, and economic relations. **Prerequisite(s):** SOC 100 **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AFR, AMS, GSWS

SOC 240 - Political Sociology

Course Units: 1.0 Explores issues of political power, domination, and legitimacy from a sociological perspective. Topics include the creation and maintenance of political power and the impact of political socialization. **Cross-Listed:** PSC 284 **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AFR, AMS, ENS, LAW

SOC 270 - Social Movements, the Environment, and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** PSC 283 **Prerequisite(s):** SOC 100 **ISP:** AMS, ENS, STS

SOC 284 - Sociology of Women & Health

Course Units: 1.0 A critical introduction to the sociological analysis of issues in women's health in the contemporary United States, emphasizing how the key variables of gender, race & class structure access to health & well-being for women in our society. **Prerequisite(s):** SOC 100 **ISP:** AMS, GSWS, STS

SOC 290 - Personality, Media, and Society

Course Units: 1.0 How social roles and group dynamics impact personality and group behavior. Agents of socialization, with particular emphasis on the media and their impact on individual and societal expectations and values, will also be examined. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS

SOC 314 - America's War on Drugs: Culture, Conflict, & Social Policy

Course Units: 1.0 A critical evaluation of United States domestic and international drug policy. In this course, students will gain an understanding of domestic and international drug policy, and will apply a sociological perspective to understand the historic and current situational forces which shape America's War on Drugs. We will evaluate current drug control strategies and the inequalities that have emerged as a result. This course also offers an overview of

America's international war on drugs and the role it plays in other parts of the world. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS

SOC 340 - Inequality and Mobility: From Penthouse to Poorhouse

Course Units: 1.0 The forms, causes, and consequences of social inequality. Topics include objective and ideological manifestations of trends and patterns in wealth, poverty, mobility, and welfare policy. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS

SOC 346 - Sociology of Black Women's Culture

Course Units: 1.0 This course examines the socialization of black womanhood. We will explore how certain socio-historical norms shape black women's ideas about race, gender, class, sexuality, constructions of femininity, and public and private activism. Understanding the complexities of strategies of resistance to multiple and intersecting oppressions (race, class, gender, sexuality, etc.) forms the focus of the course. **Prerequisite(s):** Suggested: SOC 230 , SOC 233 , GSW 100 **CC:** LCC, SOCS **ISP:** AFR, AMS, GSWS

SOC 364 - Sex and Motherhood

Course Units: 1.0 An analysis of selected issues in the regulation of human reproduction & family building, primarily from sociological and feminist perspectives. Topics such as birth control, abortion, adolescent pregnancy, infertility & pregnancy are examined in historical and cross-cultural contexts with particular focus on the variables of gender, class and race. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS, GSWS

American Studies Minor

Requirements for the Minor:

Six courses including:

One English core course

One History core course

Four courses with either an historic or thematic concentration, in consultation with their American Studies academic adviser.

Note: These courses must have either a historic or thematic concentration (see possible concentrations under requirements for major). One of the four must come from Division I (Arts & Humanities) and one from Division II (Social Sciences). One course must cover issues of race and ethnicity or gender in America. No course for the minor can double count towards a student's major or second minor.

American Studies, B.A.

Requirements for the Major:

Thirteen courses including:

Note: One of the thirteen courses must cover issues of race and ethnicity or gender in America. One of the thirteen courses must focus predominantly on the pre-1900 time period. At least four of the thirteen courses must be from Division I (Arts and Humanities), and at least four from Division II (Social Sciences.) No course can double towards the student's minor if one is being pursued.

Three core courses

Note: At least one core course must be from English and one from History), which should be completed by the end of a student's junior year. The choices for core courses are any 200-level English class on American Literature (must take a 100-level class as prerequisite) and the following:

HST 101 - History of the United States to the Civil War

Course Units: 1.0 Political, economic, and social developments in the colonial and early national periods. **CC:** SOCS **ISP:** AMS

HST 102 - History of the United States Since the Civil War

Course Units: 1.0 Political, economic, and social developments: continuity and change in modern America. **CC:** SOCS **ISP:** AMS

HST 113 - The Origins of American Society

Course Units: 1.0 The evolution of American society from its 17th-century origins through the aftermath of the Revolution. **CC:** SOCS **ISP:** AMS

HST 124 - Monuments, Museums, and Movies: Introduction to Public History

Course Units: 1.0 This course will provide an overview of public history, defined as the presentation of history to a general public audience. Students will learn the theory, methods, and practice of public history in its various dimensions, including museums, monuments, historic sites, and films; they will explore the controversies that emerge in public history settings, including the battle over the Enola Gay, the Holocaust Museum, and commemorations of September 11th; and they will engage in a public history project in the Schenectady area. **CC:** SOCS **ISP:** AMS

HST 128 - The American Jewish Experience

Course Units: 1.0 Jews arrived in Britain's American colonies in 1654. In the space of 350 years their numbers increased dramatically and they made significant contributions to a plethora of areas in American society. Jews and Judaism also experienced significant changes through the encounter with the United States. But for all the gains in status and achievement, there are those who speak of a problematic future for American Jewry. **CC:** SOCS **ISP:** AMS, REL

HST 129 - History of Sports in America

Course Units: 1.0 Fields of battle (military, political, economic, and social) generally characterize the teaching of American history. Throughout times of conflict, however, it has often been the fields of American sport which have provided distraction, respite, and relief from these struggles. Meanwhile during times of peace, the fields of sport have

contributed more than leisure and entertainment; they have reflected the American people's lives, hopes and dreams. Sport, in other words, has been and continues to be an active mediator in America's life, and a lens through which we can examine the broader contexts of American history. **CC:** SOCS **ISP:** AMS

HST 131 - African-American History 1

Course Units: 1.0 The purpose of this course is to help you better understand both the role of race and slavery in early American history and the contributions of African-Americans to society and culture in America before 1877. The course will examine the lives of black Americans, enslaved and free, from the arrival of the first Africans in the New World through Reconstruction. It will also address more abstract ideas about cultural and "racial" differences. Throughout this course, you will be asked to consider the question "which came first, racism or slavery?" **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 132 - African-American History 2

Course Units: 1.0 This course covers the Black experience in America from the end of the Civil War until the present day. It will generally proceed chronologically, but there may be some overlap as it tries to cover certain themes, such as culture, oppression, resistance, and identity. Throughout the course students will be asked to consider the question to what extent is the African-American experience unique and to what extent is it representative of the "American" experience. **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 135 - Latinos In/As U.S. History

Course Units: 1.0 What does U.S. history look like if we consider it a Latin American nation? This course explores the history of El Norte through the eyes of border-crossing, indigenous communities, Spanish settlers in the South and West, and the Latin American and Caribbean immigrant populations that have made their homes across the country since its founding. We end with a particular focus on Latin American and Latinx communities in 21st-century New York. **CC:** SOCS **ISP:** AFR, AMS, GSW, LAS

HST 209 - Race, Gender, and Nationalism in American Sports

Course Units: 1.0 This course examines the development and the history of US sports from the 19th through the 21st centuries with special focus on sports' bond with nationalism, race, and gender. Modern sports cannot escape its association with US emergence in international affairs at the end of the 19th century. Intertwined with the process of establishing national identity were muscular Christian notions about masculine prowess and belief in women's natural physical limitations accompanied by a persistent belief in the fundamental superiority of the white race and its obligation to dominate over "inferior" races and cultures. As surely as sport became associated with American identity, nationalism, gender, and race became integral defining characteristics of sport. This course will be driven primarily by reading and discussion. Lectures will be used to supplement and place the readings in historical perspective, but the focus will be on reading, comprehension, and analysis. Students are encouraged to bring a variety of pre-occupations, pre-conceived ideas, and personal viewpoints to the course; they will be expected to give oral and written expression to their analysis and perspectives. **CC:** SOCS **ISP:** AFR, AMS, GSWS

HST 211 - American Indian History

Course Units: 1.0 An overview of the diverse experiences and histories of the native peoples of North America in the last five centuries. Particular attention will be paid to native peoples' various strategies to respond to change and challenges to native autonomy and communities. **CC:** LCC, SOCS **ISP:** AMS

HST 212 - "Remember the Ladies": American Women to 1900

Course Units: 1.0 An examination of changing gender roles from 1600 to 1890. Topics include work, family, civil and legal identity, and the impact of race, class, and geographic location on women's experiences. **CC:** SOCS **ISP:** AMS, GSWS

HST 213 - The New Woman: American Women from 1900

Course Units: 1.0 An examination of changing gender roles from 1890 to the present. Topics include the evolution of feminism, and the impact of race and class on women's experiences. **CC:** SOCS **ISP:** AMS, GSWS

HST 226 - A Novel View of US History

Course Units: 1.0 This course will examine the broad scope of American history from colonial times to the present as it has been revealed in American literature and novels. Employing principally primary source literature, the course will introduce students not only to American history but to an understanding of important events and developments as comprehended by those who experienced those events or who were contemporary interpreters of those events. Supplemented by lectures on the facts of historical events, primary source works will be used to re-introduce personality and complexity to the historical context in order to stimulate student understanding of the American experience. Students will be encouraged to analyze and examine the variety of outlooks that propel history, while also learning an appreciation for the value and potential of personal scrutiny, insight, and perspective. Primarily driven by readings and discussion, lectures will be used to supplement and place the readings in historical context; however, the focus will be on reading, analysis, comprehension, and communication. **CC:** SOCS **ISP:** AMS

Five courses of intensive study around a specific theme centered on either an era (see Thematic Concentration)

Note: One of the five theme courses must come from Division I (Arts and Humanities) and one from Division II (Social Sciences).

One American Studies approved seminar or an upper level American Studies approved course that is a WAC in the junior year.

Note: If possible, the course should be related to the student's thematic concentration. If not taken in the junior year, this course must be completed by the end of the student's first senior thesis term.

Two American Studies approved courses, which can be at any level and may be outside the student's thematic concentration.

Two-term written thesis or two-term senior project related to his or her thematic concentration in the senior year.

Note: If a student is completing a senior project in a non-text medium (such as audio, video, or multi-media), he or she must have a written component in the form of a journal that results in a final paper of at least fifteen pages, to fulfill the Writing Across the Curriculum (WS) requirement. A student will work with a primary, or first, thesis advisor and a second thesis advisor from a different department whom the student must consult early during the research portion of the project to better ensure the interdisciplinary focus of the thesis. Both thesis advisors will participate in the oral defense of the thesis at the completion of the project. A student must consult with the American Studies program director during the winter term of his or her junior year and submit a thesis proposal listing preferred first and second thesis advisors.

Thematic Concentration

In consultation with his or her American Studies academic advisor, a student must complete five (5) courses of intensive study around a specific theme centered on either an era (such as antebellum America or the United States since the Cold War) or a topic (such as the emergence of mass culture or ethnicity and race in American life).

One of the five theme courses must come from Division I (Arts and Humanities) and one from Division II (Social Sciences). In addition, the thematic courses must come from at least three different departments. Every student must complete an American Studies course selection list with his or her American Studies advisor to determine which courses would best fit the chosen theme and to find out how often the courses are offered. All courses counted towards the major must have American Studies course approval.

The following are possible thematic concentrations for an American Studies major, interdepartmental major or minor (these are only suggestions; there are many more possibilities): The Colonial Era; The American Revolution through the Civil War; 19th Century America; Contemporary America: c. 1960-present; Latino(as) in U.S. History & Culture; Comparative American Ethnic Studies; America in the World; American Identity: Race, Class & Gender; American Modernism; American Creativity in the 20th-21st Century; Progressive America: Civil Rights and Social Justice; American Industrialization: The Environment, Society and Labor; American Media & Popular Culture; Visual Culture and Social Justice. See program website for a list of additional possible themes and supporting courses.

A concentration on 19th Century America might include:

AMU 130 - American Music

Course Units: 1.0 American music-cultures approached through performance, lecture, video, and audio. Survey samples from popular, classical, and folk traditions. **CC:** HUM

HST 118 - Civil War and Reconstruction

Course Units: 1.0 An examination of the causes of the deepening sectional crisis; the political, economic, and social reasons for Southern secession; the move toward emancipation as a Northern war aim; the impact of the war on women and men, with special attention to geographic location, race, and class; and the experience of Reconstruction in the South. **CC:** SOCS **ISP:** AMS

PHL 341 - The Contemporary Crisis of Truth

Course Units: 1.0 A study of 20th century European or American philosophies: phenomenology, existentialism, or analytic philosophy. **CC:** HUM **ISP:** AMS

PSC 239 - American Political Thought Through the Progressive Era

Course Units: 1.0 Political thought in America from the colonial period until World War I with an emphasis on evolving political, social, cultural, and intellectual perspectives on enlightenment values, nationalism, slavery, the rise of the industrial economy, the political machine, and America's changing role in the world. **CC:** SOCS **ISP:** AMS

Or a thematic concentration on progressive America; civil rights and social justice might include:

AAH 360 - Seminar: Visual Culture, Race and Gender

Course Units: 1.0 A lecture and discussion-based course concerned with how constructions of race and sexual differentiation are played out across art history and visual culture, focusing on the visual arts of Western Europe and

the United States. The first half of the course investigates the constructs of gender and race from antiquity to the middle of the 20th century as expressed in art and visual culture. The second half of the course is a close study of female artists of color living and working in the United States, grouped as African- American, Latina/Chicana, Asian and Middle Eastern and Multi-ethnic. **CC:** LCC, HUM, JCAD, JCHF **ISP:** AFR, AMS, GSWS, LAS

EGL 248 - Introduction to Black Poetry

Course Units: 1.0 We will explore the development of African-American poetic voices in North America. We will look at poems and poets as they constitute a hybrid and composite tradition. We will read poetry in anthologies; we will also read several full books by individual authors, and will listen to performance poetry on CD and DVD. A partial list of poets we will read includes Wheatley, Harper, Dunbar, Hughes, McKay, Helene Johnson, Brooks, Baraka, Clifton, Sanchez, Cortez, Morris, Mullen, Brathwaite, Komunyakaa, Francis, Dungy, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AFR, AMS

HST 231 - The Civil Rights Movement

Course Units: 1.0 A survey of the civil rights movement, assessing the early campaigns of the 1940s, the development of black grassroots organizations in the 1950s and 1960s, and the impact of black nationalist consciousness in the late 1960s and early 70s. **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 312 - "Bonds of Womanhood": History of Women's Rights in the United States

Course Units: 1.0 This course examines major themes in the study of women's rights in the United States. Topics include constitutional and legal rights changes over time; the interplay of gender with race, class, and sexuality involved in "rights" movements since the nineteenth century; and current controversies over women's rights. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS **ISP:** AMS, GSWS

PSC 266 - Women and Politics

Course Units: 1.0 The political, social, and economic circumstances of women in the U.S. Topics include history of women's rights, the gendering of politics, women as political actors (voters, candidates, and government officials), and politically relevant differences across gender identities. Issues include gender equality (in the workplace, education and athletics), reproductive rights, and violence against women, among others. Special attention to the intersection of gender with other identities. **Prerequisite(s):** PSC 111 or SOC 100 or sophomore standing **CC:** JSPE **ISP:** AMS, GSWS

PSC 371 - Civil Rights and Civil Liberties

Course Units: 1.0 Considers the protections afforded to individual rights and liberties by the U.S. Constitution and the Bill of Rights. Topics include freedom of speech and assembly, the right to privacy, religious freedom, equal protection and discrimination, and the due process rights of those accused of crimes. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, JCHF, JSPE **ISP:** AMS, LAW

SOC 270 - Social Movements, the Environment, and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** PSC 283 **Prerequisite(s):** SOC 100 **ISP:** AMS, ENS, STS

Additional Requirements

During the junior year, a student must take an American Studies approved seminar or an upper level American Studies approved course that is a WAC. If possible, the course should be related to the student's thematic concentration. If not taken in the junior year, this course must be completed by the end of the student's first senior thesis term.

A student must take an additional two (2) American Studies approved courses, which can be at any level and may be outside the student's thematic concentration.

One of the thirteen (13) courses must cover issues of race and ethnicity or gender in America. One of the thirteen (13) courses must focus predominantly on the pre-1900 time period. At least four (4) of the 13 courses must be from Division I (Arts and Humanities), and at least four (4) from Division II (Social Sciences). No course can double towards the student's minor if one is being pursued.

During the senior year, a student must complete a two-term written thesis or two-term senior project (AMS 498 & AMS 499) related to his or her thematic concentration. If a student is completing a senior project in a non-text medium (such as audio, video, or multi-media), he or she must have a written component in the form of a journal that results in a final paper of at least fifteen pages, to fulfill the Writing Across the Curriculum (WS) requirement. A student will work with a primary, or first, thesis advisor and a second thesis advisor from a different department whom the student must consult early during the research portion of the project to better ensure the interdisciplinary focus of the thesis. Both thesis advisors will participate in the oral defense of the thesis at the completion of the project. A student must consult with the American Studies program director during the winter term of his or her junior year and submit a thesis proposal listing preferred first and second thesis advisors.

Requirements for Honors in American Studies:

To receive honors as an American Studies major or an ID major, a student must (1) have a cumulative grade point average of 3.3; (2) maintain a grade point average of 3.3 in his or her American Studies approved courses; (3) successfully complete a two term senior thesis with a grade of A or A-; (4) receive a high pass or pass with distinction for the oral thesis defense; (5) give an oral presentation at The Steinmetz Symposium in the spring of his or her senior year; and (6) place a copy of the thesis in the library archives. Further guidelines for the senior thesis and honors are available from the program director.

Anthropology

Chair: K. Brison
Faculty: Professors K. Brison, S. Leavitt; Associate Professors; A. Khan, R. Samet, J. Witsoe (on leave Fall 2024, Spring 2025).
Staff: L. Pelish (Administrative Assistant)

Anthropology (ID), B.A.

Requirements for the Interdepartmental Major

Eight courses, including the following three foundation courses:

ANT 110 - Introduction to Cultural Anthropology

Course Units: 1.0 The basic concepts, methodology, and findings of cultural anthropology. Examines the similarities and diversity of human societies through in-depth case studies and cross-cultural comparisons. **CC:** LCC, SOCS, JCHF, JSPE

ANT 363 - Research Methods & Design

Course Units: 1 An introduction to qualitative research methods in anthropology. The course examines the ways anthropologists collect data through participant observation, non-directive interviewing, questionnaires, examining case studies, and doing symbolic and behavioral analyses. We examine the strengths and weaknesses of these methods and compare them to methods of other social sciences to illuminate the anthropological approach to understanding society and culture. Students learn how to formulate research questions and a research project, apply the best methods to a particular research design, and write a proposal. **Prerequisite(s):** ANT 110 **CC:** LCC, SOCS, WAC, WAC-R

ANT 390 - Thinking about Culture

Course Units: 1.0 A broad overview of the history of American and European anthropological approaches to studying individuals and societies. Students examine the strengths and weaknesses of contemporary and historical paradigms through critical reading and analysis papers. **Prerequisite(s):** ANT 110 **CC:** LCC, SOCS

An Interdepartmental senior thesis and four electives

IDM 498 - Interdepartmental Senior Thesis 1

Course Units: 0.0 For interdepartmental majors who are pursuing a two term senior thesis. The first half is graded Pass or Fail. **CC:** WS

IDM 499 - Interdepartmental Senior Thesis 2

Course Units: 2.0 Second half of a two term senior thesis. **Prerequisite(s):** IDM 498 **CC:** WS

Or an Anthropology thesis and three electives

ANT 498 - Anthropology Senior Thesis 1

Course Units: 0.0

ANT 499 - Anthropology Senior Thesis 2

Course Units: 2.0 **CC:** WS

Requirements for Honors in Anthropology:

For departmental honors, a major must fulfill the following requirements: (1) a minimum overall G.P.A. of 3.50; (2) a minimum G.P.A. of 3.70 in all anthropology courses; (3) completion of all requirements for the anthropology major or interdepartmental major; (4) A or A- grades in at least 5 anthropology courses.

Course Selection Guidelines:

The department accepts appropriate AP and transfer credits as electives or in place of ANT 110. In most cases we prefer that students take other required anthropology courses at Union. Students with no previous background in anthropology may take any 100 or 200 level courses, although ANT 110 is a good first course; 200 level courses generally involve more intensive examination of a particular topic while 100 level courses offer more general surveys of particular sub-fields of anthropology. Students intending to major in anthropology should take ANT 214 and ANT 390 in their sophomore or junior year. Students undertaking an ID major in anthropology should take ANT 390 in their sophomore or junior year. ANT 363 should normally be taken in the spring of the junior year; students anticipating going on a term abroad in spring are strongly encouraged to take ANT 363 in their sophomore year. We strongly encourage students to go on a full term abroad, preferably one of the two anthropology field schools.

Field Program in Anthropology:

The anthropology field schools in Fiji and India, offered in alternate years, give students an intensive, firsthand experience studying another culture. Students live with local families and intern in local schools and non-profit organizations. Students also design and conduct an independent research project.

Anthropology Minor

Requirements for the Minor

Six courses including:

ANT 110 - Introduction to Cultural Anthropology

Course Units: 1.0 The basic concepts, methodology, and findings of cultural anthropology. Examines the similarities and diversity of human societies through in-depth case studies and cross-cultural comparisons. **CC:** LCC, SOCS, JCHF, JSPE

And either

ANT 390 - Thinking about Culture

Course Units: 1.0 A broad overview of the history of American and European anthropological approaches to studying individuals and societies. Students examine the strengths and weaknesses of contemporary and historical paradigms through critical reading and analysis papers. **Prerequisite(s):** ANT 110 **CC:** LCC, SOCS

OR

ANT 363 - Research Methods & Design

Course Units: 1 An introduction to qualitative research methods in anthropology. The course examines the ways anthropologists collect data through participant observation, non-directive interviewing, questionnaires, examining case studies, and doing symbolic and behavioral analyses. We examine the strengths and weaknesses of these methods and compare them to methods of other social sciences to illuminate the anthropological approach to understanding society

and culture. Students learn how to formulate research questions and a research project, apply the best methods to a particular research design, and write a proposal. **Prerequisite(s):** ANT 110 **CC:** LCC, SOCS, WAC, WAC-R

and Four Electives

Anthropology, B.A.

Requirements for the Major:

We strongly encourage majors to go on a full term abroad, preferably one of the anthropology field terms.

Twelve courses, including the following four foundation courses:

ANT 110 - Introduction to Cultural Anthropology

Course Units: 1.0 The basic concepts, methodology, and findings of cultural anthropology. Examines the similarities and diversity of human societies through in-depth case studies and cross-cultural comparisons. **CC:** LCC, SOCS, JCHF, JSPE

ANT 214 - Language and Culture

Course Units: 1.0 This course examines the complex relationship between culture and language. Lectures and readings will use case materials drawn from North America, Southeast Asia, the Caribbean, Oceania, and Europe to explore theories about how language is shaped by, and in turn shapes, culture and social relations. We will start by looking at the influence of linguistic categories on the way we view the world around us. We will look at color terminology, racial and ethnic categories, pronoun use, and differences in vocabulary used to talk about men and women. Next, we will turn to cultural differences in communicative behavior. We will examine theories that suggest that males and females, and members of various ethnic groups, use language differently in everyday social interaction. These differences in communicative strategies lead to systematic miscommunication and perpetuate stereotypes. We will then turn to the ways changes in communicative technologies such as the internet and cellphones change social relations. Finally, we will explore the ways that language reflects and supports social class, and the patterning of language use in multilingual nations. **CC:** LCC, SOCS, JCHF, JSPE

ANT 363 - Research Methods & Design

Course Units: 1 An introduction to qualitative research methods in anthropology. The course examines the ways anthropologists collect data through participant observation, non-directive interviewing, questionnaires, examining case studies, and doing symbolic and behavioral analyses. We examine the strengths and weaknesses of these methods and compare them to methods of other social sciences to illuminate the anthropological approach to understanding society and culture. Students learn how to formulate research questions and a research project, apply the best methods to a particular research design, and write a proposal. **Prerequisite(s):** ANT 110 **CC:** LCC, SOCS, WAC, WAC-R

ANT 390 - Thinking about Culture

Course Units: 1.0 A broad overview of the history of American and European anthropological approaches to studying individuals and societies. Students examine the strengths and weaknesses of contemporary and historical paradigms through critical reading and analysis papers. **Prerequisite(s):** ANT 110 **CC:** LCC, SOCS

A two-term senior thesis in Cultural Anthropology:

ANT 498 - Anthropology Senior Thesis 1

Course Units: 0.0

ANT 499 - Anthropology Senior Thesis 2

Course Units: 2.0 **CC:** WS

Six Elective Anthropology Courses

Requirements for Honors in Anthropology:

For departmental honors, a major must fulfill the following requirements: (1) a minimum overall G.P.A. of 3.50; (2) a minimum G.P.A. of 3.70 in all anthropology courses; (3) completion of all requirements for the anthropology major or interdepartmental major; (4) A or A- grades in at least 5 anthropology courses.

Course Selection Guidelines:

The department accepts appropriate AP and transfer credits as electives or in place of ANT 110. In most cases we prefer that students take other required anthropology courses at Union. Students with no previous background in anthropology may take any 100 or 200 level courses, although ANT 110 is a good first course; 200 level courses generally involve more intensive examination of a particular topic while 100 level courses offer more general surveys of particular sub-fields of anthropology. Students intending to major in anthropology should take ANT 214 and ANT 390 in their sophomore or junior year. Students undertaking an ID major in anthropology should take ANT 390 in their sophomore or junior year. ANT 363 should normally be taken in the spring of the junior year; students anticipating going on a term abroad in spring are strongly encouraged to take ANT 363 in their sophomore year. We strongly encourage students to go on a full term abroad, preferably one of the two anthropology field schools.

Field Program in Anthropology:

The anthropology field schools in Fiji and India, offered in alternate years, give students an intensive, firsthand experience studying another culture. Students live with local families and intern in local schools and non-profit organizations. Students also design and conduct an independent research project.

Asian Studies

Director: Associate Professor M. Dallas (Political Science)
Faculty: Professors B. Lewis (Economics), J. Madancy (History), M. Ferry (Modern Languages), J. Matsue (Music), E. Motahar (Economics); Associate Professors B. Tuon (English), J. Ueno (Modern Languages), J. Witsoe (Anthropology), Z. Zhang (Modern Languages), S. Lullo (Visual Arts); Assistant Professor A. Khan (Anthropology)

The Asian Studies program provides a broad, interdisciplinary liberal arts education focusing on the language, culture, and the arts of Asia (with emphasis on China and Japan). The courses taken in this program equip students to pursue interest and careers that require exposure to global issues, particularly pertaining to Asia. The major leads to a bachelor of arts degree and our graduates have gone on to careers in business, government service, law, education, the arts, journalism, or further study in graduate school.

Asian Studies (ID), B.A.

Requirements for the Interdepartmental Major

Eight courses including:

Note: Students are strongly encouraged to apply for the terms abroad to China and Japan.

Three courses in either Chinese or Japanese language:

One course devoted to a senior project:

One core course is required from the following:

AMU 320 - Encounters with East Asian Music Cultures

Course Units: 1.0 Through live performance, discussion, and composition, this course explores key characteristics of East Asian Music Cultures. Particular attention is paid to the processes of cultural exchange between China, Korea, Japan and the rest of the world that have resulted in the rich breadth of performance traditions expressed today. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AIS, GSW

HST 181 - Confucians and Conquerors: East Asian Traditions

Course Units: 1.0 An overview of the traditional civilizations of China, Japan, and Korea, focusing on the emergence and development of ideologies, institutions, and social patterns up to 1800. Special emphasis on fostering an appreciation for the richness and complexity of each individual society. **CC:** LCC, SOCS **ISP:** AIS

HST 182 - Rebels, Reds, and Regular Folks: The Turbulent History of Modern Asia

Course Units: 1.0 An analytical overview of the major themes and historical processes that shaped China, Japan, and Korea from the nineteenth century to the present. **CC:** LCC, SOCS **ISP:** AIS

MLT 204 - Literary Traditions in East Asia

Course Units: 1.0 Literary developments in East Asia, looking closely at the aesthetic and philosophic foundations of its varied literature through poetic genres, story forms, oral storytelling, travel literature, and drama. **CC:** HUL, LCC, HUM, WAC **ISP:** AIS

MLT 205 - Perspectives in Modern East Asian Literature

Course Units: 1.0 The literary and artistic developments in East Asia since the mid-19th century. The course considers questions of tradition, culture, modernity, globalism, and technology by examining cultural artifacts - novels, short stories, plays, paintings, architecture, music, and film. **CC:** HUL, HUM, LCC **ISP:** AIS

PSC 253 - International Relations of East Asia

Course Units: 1.0 This course surveys the main currents of international politics in East Asia since World War Two, with an emphasis on events since the end of the cold war. It considers the sequential rise of the economies of Japan, the four East Asian tigers, and finally Southeast Asia and China, and how regional integration across East Asian countries differs from other regions in the world. Furthermore, it examines the foreign policies of the main players in this area, including the important role of the United States, and it explores the evolution of international institutions and norms pertinent to East Asia. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** LCC, SOCS **ISP:** AIS

Note: A core course is designed to give students more breadth in their study of Asia by dealing with both China and Japan over a substantial period of time.

Three AIS courses:

Note: One must deal entirely with an Asian country outside the student's language concentration. (For example, a student who takes a year of Japanese language must take one course that deals solely with China or another Asian country.)

Requirements for Honors in Asian Studies:

To be eligible for honors in the program, the student must fulfill the following requirements: (1) a minimum index of 3.30 in the program; (2) a cumulative index of 3.30 or better; (3) a grade of "A minus" or higher on the senior project; and (4) superior performance in an oral exam based on the senior project.

Asian Studies Approved Humanities Courses

Art History

AAH 101 - Islamic Art and Architecture

Course Units: 1.0 A broad and select survey of the art and architecture of Islamic cultures from the 7th through the 16th centuries that will stress the religious, social, economic, and historical contexts within which Islamic arts and architecture developed. We will study a variety of arts in addition to the traditional architecture, painting and sculpture familiar to students in Western art history surveys, including calligraphy and book painting, metalwork, ceramics, glass, carpets and textiles, and gardens and landscape design. **CC:** LCC, HUM **ISP:** AIS, REL

AAH 104 - Arts of China

Course Units: 1.0 This survey covers works of art and artistic traditions in China from the Neolithic period to the early 20th century. Lectures will focus on representative works in various media - calligraphy, painting, sculpture, architecture, and decorative arts - within the contexts of the tomb, court production, literati culture, Buddhist and Daoist temples, and interactions with other cultures. **CC:** LCC, HUM **ISP:** AIS

AAH 105 - Arts of Japan

Course Units: 1.0 This introduction to the arts of Japan from the Neolithic period to the 20th century will focus on key monuments of sculpture, architecture, painting, calligraphy, gardens, printing, and other arts within their historical and

cultural contexts. Themes discussed include: materials and technologies, sacred and profane spaces, patrons and viewers, tradition and modernity, and the creation of a distinctly "Japanese" aesthetic. **CC:** LCC, HUM **ISP:** AIS

AAH 106 - Arts of India

Course Units: 1.0 This course is designed as an introduction to ways of seeing, understanding, and questioning the visual arts in India. You will learn how the visual arts (cities, architecture, monuments, statues and painting) have informed us about the history, culture, and religion of India from the rise of civilization to the colonial period. It is important to approach the works we will study not simply as objects of aesthetic taste, but as meaningful and functional to those who commissioned, used, created, and experienced them. In addition to studying the social and political nature of the arts, a large portion of this course looks at works that served to activate the sacred within and across several religious belief systems, including Buddhism, Hinduism, and Islam. **CC:** LCC, HUM **ISP:** AIS, REL

AAH 194 - Visual Culture of Communist China, 1919 to Present

Course Units: 1.0 This course explores the relationship between ideology and visual culture in China, from the founding of the Communist Party in 1919, to Mao Zedong's prescriptions at the 1942 Yan'an Conference of Literature and Art, to art policy after the founding of the People's Republic of China in 1949. Readings and discussion will cover the range of adherence and resistance to the official party line by art workers. Topics include expressionism, socialist realism, peasant art, "wound art," cynical realism, political pop, and the avant-garde, as seen in painting, sculpture, architecture, posters, advertising, video, performance, and the material culture of quotidian life. **CC:** LCC, HUM, WAC **ISP:** AIS

AAH 286 - Art and Religion of the Silk Road

Course Units: 1.0 Central Asia - broadly defined as the area occupied, from East to West, by present-day western China, Mongolia, Russia, Kazakhstan, Kyrgyzstan, northern India, Pakistan, Tajikistan, Afghanistan, Uzbekistan, Turkmenistan, and Iran - has been characterized as both harsh wasteland and cultural crossroads. This course concerns the visual culture of the Silk Road of Central Asia, focusing on the roles visual culture played in establishing modes of religious imagination in medieval culture. **CC:** LCC, HUM **ISP:** AIS, REE, REL

Chinese

CHN 100 - Basic Chinese 1

Course Units: 1.0 Basic skills for students who begin with no knowledge of Mandarin or 1-3 years of high school instruction. **CC:** HUM, JCHF, JWOL **ISP:** AIS

CHN 101 - Basic Chinese 2

Course Units: 1.0 A continuation of CHN 100 . **Prerequisite(s):** CHN 100 or permission of instructor. **CC:** LCCC, HUM, JCHF, JWOL **ISP:** AIS

CHN 102 - Basic Chinese 3

Course Units: 1.0 A continuation of CHN 101 . **Prerequisite(s):** CHN 101 or permission of instructor. **CC:** LCCC, HUM, JCHF, JWOL **ISP:** AIS

CHN 200 - Intermediate Chinese 1

Course Units: 1.0 Needs to complete CHN 102 at Union or be able to speak and write at the paragraph level on practices or memorized topics; contact any Chinese professor for permission is you have experience in the language. **CC:** LCCC, HUM, JCHF, JWOL **ISP:** AIS

CHN 201 - Intermediate Chinese 2

Course Units: 1.0 Continuation of CHN 200 **Prerequisite(s):** CHN 200 or permission of instructor. **CC:** LCCC, HUM, JCHF, JWOL **ISP:** AIS

CHN 202 - Intermediate Chinese 3

Course Units: 1.0 Continuation of CHN 201 **Prerequisite(s):** CHN 201 or permission of instructor. **CC:** LCCC, HUM **ISP:** AIS

CHN 300 - Advanced Intermediate Chinese 1

Course Units: 1.0 Needs to complete CHN 202 at Union or be ale to speak and write at the paragraph level on familiar and unfamiliar concrete topics; contact any Chinese professor for permission if you have experience in the language. **Prerequisite(s):** CHN 202 or equivalent. **CC:** LCCC, HUM, JCHF, JWOL, WAC **ISP:** AIS

CHN 301 - Advanced Intermediate Chinese 2

Course Units: 1.0 A continuation of CHN 300 **Prerequisite(s):** CHN 300 or permission of instructor. **CC:** LCCC, HUM, WAC **ISP:** AIS

CHN 302 - Advanced Intermediate Chinese 3

Course Units: 1.0 A continuation of CHN 301 **Prerequisite(s):** CHN 301 or permission of instructor. **CC:** LCCC, HUM **ISP:** AIS

CHN 400 - The Changing Face of China

Course Units: 1.0 This course is designed for students who have completed three years of Chinese at the college level or the equivalent. More advanced authentic texts of diverse topics will be introduced to students that cover the sociopolitical, economic, and cultural dimensions of a drastically changing China sitting in the whirlwind of commercialization and globalization. Students will gain insight into contemporary China and develop a higher level of Chinese proficiency through class discussions, written compositions, TV news clips and film analyses. Class will be conducted entirely in Chinese. **Prerequisite(s):** CHN 302 or equivalent. Enrollment with the consent of the instructor. **CC:** LCCC, HUM, GCHF, GWOL, WAC **ISP:** AIS

CHN 401 - Media China

Course Units: 1.0 The course is designed for students who have completed three years of Chinese at the college level or the equivalent. Through analysis of more advanced and up-to-date authentic materials from China's mass media, students will not only develop a higher level of Chinese proficiency through class discussions, written compositions, research presentations, but also gain insight into contemporary China, as well as develop strong media literacy skills. Class will be conducted entirely in Chinese. **Prerequisite(s):** CHN 302 or equivalent. Enrollment with consent of the instructor. **CC:** LCCC, HUM, WAC **ISP:** AIS

CHN 402 - Chinese Thought in the 20th Century

Course Units: 1.0

The course is an advanced level language course that develops students' understanding and appreciation of China's century of reform through short fiction and literary essays. The readings focus on the role of women, the disparity between the rich and poor, urbanite and peasant, the role of the citizen to the state, and individual responses to great political and economic changes. The purpose of the course is to strengthen students' linguistic ability while at the same time deepen their cultural knowledge of China. Students will be able to read with the assistance of a dictionary. They will develop skills to speak on abstract topics and write critical and nuanced essays in response to the subjects covered in class. All texts are in original Chinese. Class will be conducted entirely in Chinese. Needs to complete 2 courses at the 300-level at Union or be able to speak and write at the paragraph level on a wide variety of familiar or general topics; contact any Chinese professor for permission if you have experience in the language. **Prerequisite(s):** Take CHN 302 or by instructor permission. **CC:** LCCC, HUM, WAC **ISP:** AIS

English

EGL 254 - Discourses on the Viet Nam/American War

Course Units: 1.0 This class will examine various perspectives on "The Vietnam War," or, as the people of Viet Nam call it, "The American War." In our archeological exploration into the nature of knowledge about this period in Viet Nam/U.S. history, we will not privilege one perspective over another. Rather, we will examine the diverse political, ideological, and moral positions from which various groups, such as the U.S. government, U.S. soldiers, U.S. citizens, the North Vietnamese people, and the South Vietnamese people, perceive this historic conflict. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, GCHF, GLIT **ISP:** AIS, AMS

EGL 255 - Asian American Literature and Film

Course Units: 1.0 If you are interested in the diverse history of Asian immigration in the U.S., take this course. Together as a class, we will examine major historical moments in Asian America: the first wave of Asian immigration in the mid-nineteenth century, the anti-Asian laws of the late nineteenth century, the Japanese internment during the Second World War, the emergence of Asian American studies during the 1960s Civil Rights Movement, Southeast Asian refugees after the Viet Nam/American War, and the contemporary turns to the transnational and the pan ethnic. To cover these historical moments, we will read the following texts: Island: Poetry and History of Chinese Immigrants on Angel Island, Eat a Bowl of Tea, Farwell to Manzanar, When Broken Glass Floats, American Born Chinese, and American Son. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AIS, AMS, FLM

EGL 256 - Southeast Asian-American Experience

Course Units: 1.0 This course examines the diverse literatures, histories, and cultures of the Vietnamese, Cambodian, Hmong and Laotian through the lens of war, migration, and return. Specific attention will be paid to how the War in Vietnam spread to neighboring countries such as Cambodia and Laos, resulting in mass migration of people from Southeast Asia to the West, specifically the United States. We will examine the literatures, oral testimonies, films, and music created by Southeast Asians in America. Possible authors include: Andrew Lam, Bich Minh Nguyen, Le Thi Diem Thuy, Loung Ung, Chanrithy Him, Kao Kalia Yang, Mai Neng Moua, and Burlee Vang. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AIS, AMS

Japanese

JPN 100 - Basic Japanese 1

Course Units: 1.0 This course provides a basic communicative skills in listening, speaking, reading and writing (hiragana, katakana, and introductory kanji) in real-life situations. It is designed for students with no knowledge of the language. Contact the Japanese Professor if you have experience in the language or you have more than 2 years of high school instruction. **CC:** HUM, JWOL **ISP:** AIS

JPN 101 - Basic Japanese 2

Course Units: 1.0 A continuation of JPN 100 **Prerequisite(s):** JPN 100 or equivalent. **CC:** LCCJ, HUM, JWOL **ISP:** AIS

JPN 102 - Basic Japanese 3

Course Units: 1.0 A continuation of JPN 101 **Prerequisite(s):** JPN 101 or equivalent. **CC:** LCCJ, HUM, JCHF, JWOL **ISP:** AIS

JPN 200 - Intermediate Japanese 1

Course Units: 1.0 Needs to complete JPN 102 at Union or be able to understand and exchange basic conversations and describe their basic needs and thoughts in speaking and writing. Contact the Japanese professor if you have experience in the language. **Prerequisite(s):** JPN 102 or equivalent. **CC:** HUM, JWOL **ISP:** AIS

JPN 201 - Intermediate Japanese 2

Course Units: 1.0 A continuation of JPN 200 **Prerequisite(s):** JPN 200 or equivalent. **CC:** LCCJ, HUM **ISP:** AIS

JPN 202 - Intermediate Japanese 3

Course Units: 1.0 A continuation of JPN 201 **Prerequisite(s):** JPN 201 or equivalent. **CC:** LCCJ, HUM, WAC, JCHF, JLIT, JWOL **ISP:** AIS

JPN 300 - Advanced Intermediate Japanese 1

Course Units: 1.0 The primary goal of this course is the development of a broad competency in speaking listening, reading, and writing in a culturally coherent way. Materials will cover a wide range of academic and cultural interests. **Prerequisite(s):** JPN 202 or equivalent. **CC:** LCCJ, HUM, GCHF, GWOL **ISP:** AIS

JPN 301 - Advanced Intermediate Japanese 2

Course Units: 1.0 Continuation of JPN 300 **Prerequisite(s):** JPN 300 or equivalent. **CC:** LCCJ, HUM **ISP:** AIS

JPN 302 - Advanced Intermediate Japanese 3

Course Units: 1.0 Continuation of JPN 301 **Prerequisite(s):** JPN 301 or equivalent. **CC:** LCCJ, HUM **ISP:** AIS

Modern Languages and Literatures

MLT 200 - Modern Chinese Literature

Course Units: 1.0 An introduction to Chinese literature in the 20th Century. The publishing industry, and especially literature, played an influential role in shaping China's modern development. Students will study the origins of the New Culture movement's "new literature," analyze "revolutionary romanticism" and art for the masses, as well as examine contemporary works of popular fiction. The course relates China's literary and cultural trends within the local and global dimensions of modernity. All works in English. **CC:** HUL, LCC, HUM **ISP:** AIS

MLT 201 - Chinese Cinemas

Course Units: 1.0 From the glitzy production studios of 1930s Shanghai to the contemporary hinterlands of China, the backstreets of Hong Kong, and the towns of Taiwan, this course examines the
development and transformation of Chinese cinema. It will explore questions of aesthetics, Chinese identity, transnationalism, and representation. **CC:** HUM, LCC, WAC **ISP:** AIS, FLM

MLT 202 - Gender and Sexuality in Modern China

Course Units: 1.0 The course examines gender and sexuality in 20th-century China as a gateway to understanding the political, cultural, and economic realities of China today. We consider the figure of the "New Woman" during China's civil war and World War II, the androgynous ideal after the founding of the People's Republic, the "Successful Man" during China's economic reform, and the articulations of "Comrades" as part of local, national, and international conversations. Readings in English. All films subtitled. **CC:** HUL, LCC **ISP:** AIS, GSWS

MLT 203 - Asian American Film and Performance

Course Units: 1.0 An examination of topics in Asian American studies through film and performance by and about Asian Americans. Class material draws from independent filmmakers, theatrical and artistic performances, as well as theoretical and critical texts on culture and diversity, gender, the diaspora, and ethnicity. **CC:** HUM, LCC **ISP:** AIS, AMS, FLM, GSWS

MLT 204 - Literary Traditions in East Asia

Course Units: 1.0 Literary developments in East Asia, looking closely at the aesthetic and philosophic foundations of its varied literature through poetic genres, story forms, oral storytelling, travel literature, and drama. **CC:** HUL, LCC, HUM, WAC **ISP:** AIS

MLT 205 - Perspectives in Modern East Asian Literature

Course Units: 1.0 The literary and artistic developments in East Asia since the mid-19th century. The course considers questions of tradition, culture, modernity, globalism, and technology by examining cultural artifacts - novels, short stories, plays, paintings, architecture, music, and film. **CC:** HUL, HUM, LCC **ISP:** AIS

MLT 209 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** ENS 222 **CC:** LCC, SET, HUL, HUM, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

MLT 250 - Language, Identity, and Power in Japan

Course Units: 1.0 This course will focus on societal aspects which are represented in the characteristics of language. Discussions will include gender differences, formality, and communication strategies. This course will be taught in English and no prior Japanese language knowledge is required. **CC:** HUM, LCC **ISP:** AIS, GSWS

MLT 254 - Explore Japanese Manga and Anime

Course Units: 1.0 This course examines the rich world of Japanese manga (comic books) and anime (animation), one of the most significant cultural products in Japan and a dominant global media export. The topics include the issues of the relationship between humans and nature; gender relations; humans and technology; "Japaneseness" of anime; and globalization of manga. This course will be taught in English and no prior Japanese language knowledge is required. **CC:** HUM, LCC **ISP:** AIS

Music

AMU 012 - Union College Japanese Drumming and Global Fusion Band

Course Units: 0.0 The Union College Japanese Drumming and Global Fusion Band (Zakuro-Daiko) rehearses weekly on a variety of Japanese drums and other types of global instruments. The ensemble regularly performs both on- and off-campus. No previous musical experience is required, though members need to audition/interview to determine participation at the discretion of the instructor. See Professor Matsue. **ISP:** AIS

AMU 233 - Japanese Drumming Workshop

Course Units: 1.0 This course introduces Japanese drumming, exploring its origins and subsequent development as a national art form following WWII, and then its ultimate spread globally as a voice of Asian-American activism. The course emphasizes performance on the drums and culminates in a final concert and performance project. No previous musical experience is required. **CC:** LCC, HUM, JCAD, JCHF, JSPE **ISP:** AIS, GSW

AMU 234 - Balinese Gamelan Workshop

Course Units: 1.0 This course introduces Balinese music and culture, exploring the importance of music, dance, and religion in the everyday life of Balinese people. The course emphasizes performance of Balinese gong kebyar (an orchestral form featuring xylophones, gongs, drums, and cymbals) and culminates in a final concert and performance protest. No previous musical experience is required. **CC:** LCC, HUM **ISP:** AIS

AMU 320 - Encounters with East Asian Music Cultures

Course Units: 1.0 Through live performance, discussion, and composition, this course explores key characteristics of East Asian Music Cultures. Particular attention is paid to the processes of cultural exchange between China, Korea, Japan and the rest of the world that have resulted in the rich breadth of performance traditions expressed today. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AIS, GSW

Religion

REL 160 - Introduction to Buddhism

Course Units: 1 This introductory course explores Buddhist understandings of the human condition and visions of human flourishing. We cover the major histories, doctrines and practices of Buddhism, from the fifth century BCE to the present day, by engaging sacred texts from the Buddhist canon as well as poetry, literature, autobiography and film. We consider how Buddhism has changed and evolved as it spread from India, to Central and East Asia and, more recently, to the West. Key themes include the question of suffering, the nature of compassion, training the emotions, and the place of the ordinary and imperfect within Buddhist visions of enlightenment. Throughout the course, we consider the relevance of class material to our own views and experiences of the world, and to the question of how we should live our lives. **CC:** HUM **ISP:** AIS

Asian Studies Approved Social Sciences Courses

Anthropology

ANT 184 - Contemporary Japanese Society

Course Units: 1.0 An anthropological introduction to contemporary Japanese society and culture. Provides an historical overview, then explores in greater depth such topics as family structure, education, religious traditions, the work place, women, and contemporary social problems. **CC:** LCC, SOCS **ISP:** AIS, GSWS

ANT 222 - Childhood in Anthropological Perspective

Course Units: 1.0 This course examines childhood across cultures. Lectures and readings will use case materials drawn from North America, Europe, Africa, Oceania, and Asia to explore ways in which culture affects how parents deal with children. We will also examine the acquisition of culture by young children. We will look closely at ways in which different cultural practices shape the experience of childhood from infancy to adolescence. Topics addressed will include: beliefs about infants, language acquisition, cultural differences in theories about learning, the nature of schools in various cultures, the role of play and mass media in shaping children, the cultural shaping of gender identity, and adolescent initiation rites. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AIS, GSW

ANT 243 - Anthropology and International Development

Course Units: 1.0 Faith in twentieth-century development and progress has been severely shaken by the environmental crisis and the failures of the international development assistance. What is development? What is the third world? How was it made? What problems does it face and how is it changing? What are the causes of failure in development / aid programs? Drawing on a variety of ethnographic materials and case studies, this course discusses the nature of economic and social changes in post colonial societies and underdeveloped areas in the West / North, offers a critical analysis of sustainable development, and introduces the students to the practices, anthropological and otherwise, of planning policy interventions. The course shows how anthropological knowledge and understanding can illuminate "development issues" such as rural poverty, environmental degradation and the globalization of trade. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AIS, REE

ANT 256 - Anthropology of Islam

Course Units: 1.0 This class provides an anthropological perspective on Islam, one that tries to understand Islam as a living tradition. There are well over a billion Muslims in the world who speak countless languages and reside in dozens of nation-states. The immense diversity of Islamic practice and Muslim life is bewildering and defies any simple generalization. However, this diversity need not blind us to the themes that connect Islam and cut across Muslim life around the world. While not an exhaustive survey of Islamic practice and ways of life, this class focuses on the themes that connect Islam across diverse regions and peoples. These themes include: Islamic authority, conceptions of gender,

the importance of Islamic law, and the value of Islamic community. In this class, we look beyond local variation to understand Islam as a living tradition. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AIS, REL

ANT 272 - Psychological Anthropology

Course Units: 1.0 This course examines the influence of culture and society on individual psychology. Readings and class discussions examine the history of the way anthropologists have thought about the relationship between culture and personality. Issues examined will include: Do cultures produce and favor distinctive personality types? How is mental illness shaped by cultural beliefs and social practices? Are there distinctive "culture bound syndromes" and, if so, what produces them? Do cultures provide tools to help individuals adjust to crises? Do some cultures do this better than others? Are emotions fundamentally the same across cultures or does emotional experience vary significantly with culture? Is there a culture of psychiatry in the US? How do our cultural assumptions and our pharmaceutical industries shape our views of personality and mental illness? Cases will be drawn from Oceania, Asia, North America, and the Middle East. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AIS, GSW, STS

ANT 280 - Contemporary India

Course Units: 1.0 The second-fastest growing major economy in the world, India is also a country with hundreds of millions of people living in extreme poverty. Arguably the most successful democracy in the postcolonial world, Indian politics is also pervaded by corruption and violence. The course will examine recent political developments in India such as the rise of Hindu nationalism, the spread of lower-caste politics, and economic liberalization. We focus on the challenges that India faces in the twenty-first century, including land and water scarcities, the already visible effects of global warming, and growing inequalities between regions and social groups. This will add complexity and balance to the now widespread image of India as a rising economic superpower within an emergent "Asian Century." **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AIS

Economics

ECO 235 - Chinese Economy

Course Units: 1.0 This course introduces the workings of the Chinese economy since its economic reform in 1978. It is about the transformation of China's economy into a market economy with its special characteristics. It covers historical and institutional background, economic growth, economic fluctuations, macroeconomic policies, banking and financial markets, foreign trade, and foreign investment **Prerequisite(s):** ECO 101 **CC:** SOCS **ISP:** AIS

ECO 320 - Seminar: P.E. of Dev in Asia

Course Units: 1 This course examines different analytical approaches to identify the critical determinants of economic development and evaluate the impacts of governments' policy choices through case studies on Asian countries and broader discussions that span other regions. We will cover major themes of development including industrialization, innovation, trade, microfinance, state-owned enterprise reforms and the politics of the Covid-19 pandemic with a focus on their political economy aspects. In the meantime, you will learn various quantitative research methods and improve your research skills through a major individual research project. **Prerequisite(s):** ECO 241 and ECO 243 **CC:** SOCS, WAC-R **ISP:** AIS

ECO 354 - International Economics

Course Units: 1.0 Foreign trade and international finance, protectionism, international migration of capital and labor, political economy of trade policy, strategic trade policy, industrial policy, geo-economic and geopolitical issues. **Prerequisite(s):** ECO 241 , ECO 242 , and ECO 243 **CC:** LCC, SOCS **ISP:** AIS, REE

ECO 376 - Seminar in Global Economic Issues

Course Units: 1.0 This seminar explores different perspectives on current global economic issues. A review of the recent debate on globalization provides a framework for discussion of a variety of issues related to international trade and the international financial system. Topics covered may include: international trade and the environment, international trade and labor standards, regionalism vs. world trade, international financial crises, reforming the global financial architecture, and international capital flows and developing countries. **Prerequisite(s):** ECO 241 , ECO 242 and ECO 243 **CC:** SOCS, WAC-R **ISP:** AIS, LAS, REE

History

HST 144 - Global Medieval World

Course Units: 1 This class takes you on a journey through the global medieval world examining connections and comparisons among societies across political boundaries and geographies, boundaries of language and religion, and at the intersection of various economic systems. Over a period of 1000 years, we will explore peoples of Mesoamerica, North and sub-Saharan Africa, the Mediterranean basin, western and eastern Europe, the Middle East, Central Asia, the Indian subcontinent (and Indian Ocean), East Asia and Oceania. **CC:** SOCS **ISP:** AFR, AIS, REL

HST 181 - Confucians and Conquerors: East Asian Traditions

Course Units: 1.0 An overview of the traditional civilizations of China, Japan, and Korea, focusing on the emergence and development of ideologies, institutions, and social patterns up to 1800. Special emphasis on fostering an appreciation for the richness and complexity of each individual society. **CC:** LCC, SOCS **ISP:** AIS

HST 182 - Rebels, Reds, and Regular Folks: The Turbulent History of Modern Asia

Course Units: 1.0 An analytical overview of the major themes and historical processes that shaped China, Japan, and Korea from the nineteenth century to the present. **CC:** LCC, SOCS **ISP:** AIS

HST 281 - Samurai to Salarymen: Modern Japanese History

Course Units: 1.0 Analysis of the social, economic and political changes that have characterized Japan's emergence as a world power from the Meiji restoration to the present. **CC:** LCC, SOCS **ISP:** AIS

HST 282 - The Mongols: Terror, Trade and Tolerance

Course Units: 1.0 This course explores the rise, fall, and memory of the great Mongol empire. Students will read not only about the Mongols themselves, but also about the many cultures and countries that the Mongols conquered, and we will analyze those fraught cross-cultural encounters through primary and secondary source materials. We will also look at how the overwhelmingly negative portrayal of the Mongols has evolved over time, and students will look at the way Genghis Khan is depicted in films and monuments. **CC:** LCC, SOCS **ISP:** AIS, REE

HST 283 - The Mao Years

Course Units: 1.0 This course explores the phenomenal changes and catastrophic consequences of Mao Zedong's domination of China. Although the bulk of the class focuses on events following the founding of the People's Republic of China in 1949 to Mao's death in 1976, we will begin by looking at the China into which Mao was born in 1893 and trace his rise to power. We will also examine the legacy of the Mao years on contemporary Chinese politics and

society. Students will analyze Mao's China through memoirs, films, visual propaganda, secondary analyses, and of course, Mao's Little Red Book. **CC:** LCC, SOCS **ISP:** AIS

HST 284 - Hobbled and Heroic: Women in China and Japan

Course Units: 1.0 A comparative look at how the societies of China and Japan shaped the various roles assumed by women in these two cultures, as well as the evolution of those roles over time. **CC:** LCC, SOCS **ISP:** AIS, GSWS

HST 285 - The Samurai: Lives, Loves, and Legacies

Course Units: 1.0 This course explores the evolution of the samurai as a caste, their military and family lives, their passions, and their symbolic meaning to Japanese and to others. We will be reading first-hand accounts written by samurai men and women, viewing a number of well-known and lesser-known samurai films, and looking at how the realities of samurai life compare with the many meanings the samurai have acquired over the centuries. **CC:** LCC, SOCS **ISP:** AIS

HST 383 - The Last Dynasty: The Glory and Fall of the Qing Empire, 1644-1911

Course Units: 1.0 For 250 years, the Qing Dynasty ruled China, but when it fell in the dramatic 1911 Revolution, the entire imperial system fell with it. This course will focus on the enormous social, political, and economic changes that shaped China during the reign of the Manchu dynasty and changed China forever. **Prerequisite(s):** any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AIS

HST 481 - Seminar in East Asian History: Remembering World War II in Asia

Course Units: 1.0 World War II was the most destructive conflict of the twentieth century, but many students in America are unfamiliar with the toll it took on Asia and why residual tensions between Japan, China, and Korea remain so real and so raw today. This course examines how the war came about, how it is remembered, and how its complex legacy still affects the region. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS, WAC, WAC-R **ISP:** AIS

Political Science

PSC 213 - Contemporary China: Politics, Economy and Society

Course Units: 1.0 A survey course on the politics of the People's Republic of China, with an emphasis on state-society relations. After briefly introducing the Republican and state socialist eras, the heart of the course provides a historical and topical overview of the contemporary political and economic reforms in China. It explores topics in Chinese domestic politics, such as policy-making, center-local relations, inequality, rural transformation, industrialization, village elections, the rule of law and contentious politics, in addition to China's relationship with the outside world, including its integration into the international economy, the environment, energy and foreign policy. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AIS

PSC 246 - Asian Development: Industrialization Beyond the West

Course Units: 1.0 How did some Asian countries become the first non-Western countries to achieve high-income status, near elimination of poverty, a highly educated and healthy population, leading edge technology and in some cases robust democracies and even admirably equal distributions of wealth? And how did they come to compete with the West, often on terms set by Western countries, despite the West's much earlier industrialization, and the vast geographic and cultural distances? Are answers to be found in politics and institutions? Culture? Resources and

demography? Historical effects of imperialism? Regionalism? After a brief comparison of pre-modern China and Europe, the course focuses on the 'miracle' of Japanese industrialization from the late 19th to early 20th century, as well as Japan's combination of industrialization and militarization on the road to World War Two. This is followed by post-World War Two Japan and the four Asian Tigers (South Korea, Taiwan, Hong Kong and Singapore), before focusing on the return of China since the 1980s, and Southeast Asia within the Asian region. This is a reading intensive course, though no background in Asia, political science or economics is required **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AIS, AMS

PSC 253 - International Relations of East Asia

Course Units: 1.0 This course surveys the main currents of international politics in East Asia since World War Two, with an emphasis on events since the end of the cold war. It considers the sequential rise of the economies of Japan, the four East Asian tigers, and finally Southeast Asia and China, and how regional integration across East Asian countries differs from other regions in the world. Furthermore, it examines the foreign policies of the main players in this area, including the important role of the United States, and it explores the evolution of international institutions and norms pertinent to East Asia. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** LCC, SOCS **ISP:** AIS

Asian Studies Minor

Requirements for the Minor

Six courses including:

Three courses in either Chinese or Japanese language:

One core course is required from the following:

AMU 320 - Encounters with East Asian Music Cultures

Course Units: 1.0 Through live performance, discussion, and composition, this course explores key characteristics of East Asian Music Cultures. Particular attention is paid to the processes of cultural exchange between China, Korea, Japan and the rest of the world that have resulted in the rich breadth of performance traditions expressed today. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AIS, GSW

HST 181 - Confucians and Conquerors: East Asian Traditions

Course Units: 1.0 An overview of the traditional civilizations of China, Japan, and Korea, focusing on the emergence and development of ideologies, institutions, and social patterns up to 1800. Special emphasis on fostering an appreciation for the richness and complexity of each individual society. **CC:** LCC, SOCS **ISP:** AIS

HST 182 - Rebels, Reds, and Regular Folks: The Turbulent History of Modern Asia

Course Units: 1.0 An analytical overview of the major themes and historical processes that shaped China, Japan, and Korea from the nineteenth century to the present. **CC:** LCC, SOCS **ISP:** AIS

MLT 204 - Literary Traditions in East Asia

Course Units: 1.0 Literary developments in East Asia, looking closely at the aesthetic and philosophic foundations of its varied literature through poetic genres, story forms, oral storytelling, travel literature, and drama. **CC:** HUL, LCC, HUM, WAC **ISP:** AIS

MLT 205 - Perspectives in Modern East Asian Literature

Course Units: 1.0 The literary and artistic developments in East Asia since the mid-19th century. The course considers questions of tradition, culture, modernity, globalism, and technology by examining cultural artifacts - novels, short stories, plays, paintings, architecture, music, and film. **CC:** HUL, HUM, LCC **ISP:** AIS

PSC 253 - International Relations of East Asia

Course Units: 1.0 This course surveys the main currents of international politics in East Asia since World War Two, with an emphasis on events since the end of the cold war. It considers the sequential rise of the economies of Japan, the four East Asian tigers, and finally Southeast Asia and China, and how regional integration across East Asian countries differs from other regions in the world. Furthermore, it examines the foreign policies of the main players in this area, including the important role of the United States, and it explores the evolution of international institutions and norms pertinent to East Asia. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** LCC, SOCS **ISP:** AIS

Two additional AIS courses:

Asian Studies Term Abroad Programs

Courses

CHN 204T - Chinese Language Studied Abroad

Course Units: 1.0 See International Programs. **CC:** LCCC **ISP:** AIS **Note:** Fall term in China.

CHN 205T - Chinese Language Studied Abroad

Course Units: 1.0 See International Programs. **CC:** LCCC **ISP:** AIS **Note:** Fall term in China.

JPN 250T - The Japanese Language Studied Independently Abroad 1

Course Units: 1.0 **ISP:** AIS

JPN 251T - The Japanese Language Studied Independently Abroad 2

Course Units: 1.0 **ISP:** AIS

JPN 252T - The Japanese Language Studied Independently Abroad 3

Course Units: 1.0 **ISP:** AIS

- JPN 253T - Japanese Language Studies Abroad

GPM 354T - WMC Balinese Performing Arts Mini-term

Course Units: 1.0 This mini-term focuses on the study of the performing Arts of Bali. Students will have daily group instruction with Masters Performers of gamelan (the Balinese orchestra of gongs and xylophones) and dance, as well as additional lessons in an art form one's choosing (e.g. painting, drumming, mask making, etc.). This instruction will culminate in a final performance. Students will also visit many important artistic and ritual locations, attend professional shows and meet with local Balinese people in a variety of contexts. No previous experience is required. **CC:** LCC

Asian Studies, B.A.

Requirements for the Major

Fourteen courses including:

Six courses in either Chinese or Japanese language:

Two courses devoted to a senior project:

Three courses from AIS offerings in either the Humanities or the Social Sciences:

Two additional courses in the opposite division:

Note: One of those five courses must deal entirely with an Asian country outside the student's language concentration. (For example, a student who takes a year of Japanese language must take one course that deals solely with China or another Asian country)

One core course is required from the following:

AMU 320 - Encounters with East Asian Music Cultures

Course Units: 1.0 Through live performance, discussion, and composition, this course explores key characteristics of East Asian Music Cultures. Particular attention is paid to the processes of cultural exchange between China, Korea, Japan and the rest of the world that have resulted in the rich breadth of performance traditions expressed today. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AIS, GSW

HST 181 - Confucians and Conquerors: East Asian Traditions

Course Units: 1.0 An overview of the traditional civilizations of China, Japan, and Korea, focusing on the emergence and development of ideologies, institutions, and social patterns up to 1800. Special emphasis on fostering an appreciation for the richness and complexity of each individual society. **CC:** LCC, SOCS **ISP:** AIS

HST 182 - Rebels, Reds, and Regular Folks: The Turbulent History of Modern Asia

Course Units: 1.0 An analytical overview of the major themes and historical processes that shaped China, Japan, and Korea from the nineteenth century to the present. **CC:** LCC, SOCS **ISP:** AIS

MLT 204 - Literary Traditions in East Asia

Course Units: 1.0 Literary developments in East Asia, looking closely at the aesthetic and philosophic foundations of its varied literature through poetic genres, story forms, oral storytelling, travel literature, and drama. **CC:** HUL, LCC, HUM, WAC **ISP:** AIS

MLT 205 - Perspectives in Modern East Asian Literature

Course Units: 1.0 The literary and artistic developments in East Asia since the mid-19th century. The course considers questions of tradition, culture, modernity, globalism, and technology by examining cultural artifacts - novels, short stories, plays, paintings, architecture, music, and film. **CC:** HUL, HUM, LCC **ISP:** AIS

PSC 246 - Asian Development: Industrialization Beyond the West

Course Units: 1.0 How did some Asian countries become the first non-Western countries to achieve high-income status, near elimination of poverty, a highly educated and healthy population, leading edge technology and in some cases robust democracies and even admirably equal distributions of wealth? And how did they come to compete with the West, often on terms set by Western countries, despite the West's much earlier industrialization, and the vast geographic and cultural distances? Are answers to be found in politics and institutions? Culture? Resources and demography? Historical effects of imperialism? Regionalism? After a brief comparison of pre-modern China and Europe, the course focuses on the 'miracle' of Japanese industrialization from the late 19th to early 20th century, as well as Japan's combination of industrialization and militarization on the road to World War Two. This is followed by post-World War Two Japan and the four Asian Tigers (South Korea, Taiwan, Hong Kong and Singapore), before focusing on the return of China since the 1980s, and Southeast Asia within the Asian region. This is a reading intensive course, though no background in Asia, political science or economics is required **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AIS, AMS

PSC 253 - International Relations of East Asia

Course Units: 1.0 This course surveys the main currents of international politics in East Asia since World War Two, with an emphasis on events since the end of the cold war. It considers the sequential rise of the economies of Japan, the four East Asian tigers, and finally Southeast Asia and China, and how regional integration across East Asian countries differs from other regions in the world. Furthermore, it examines the foreign policies of the main players in this area, including the important role of the United States, and it explores the evolution of international institutions and norms pertinent to East Asia. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** LCC, SOCS **ISP:** AIS

Note: A core course is designed to give students more breadth in their study of Asia by dealing with both China and Japan over a substantial period of time. Majors must pass a comprehensive examination in the form of an oral defense of their senior project.

Term abroad to China or Japan, or in a mini-term to Asia:

Note: If necessary, accommodations will be made.

Requirements for Honors in Asian Studies:

To be eligible for honors in the program, the student must fulfill the following requirements: (1) a minimum index of 3.30 in the program; (2) a cumulative index of 3.30 or better; (3) a grade of "A minus" or higher on the senior project; and (4) superior performance in an oral exam based on the senior project.

Astronomy

Chair: Associate Professor S. Amanuel
Faculty: Professors R. Koopmann, S. Maleki, M. Vineyard (on leave, Fall); Associate Professors C. Orzel, N. Mann, H. Watson; Assistant Professor C. Bores Quijano; Senior Lecturers S. LaBrake, J. Marr, F. Wilkin; Visiting Assistant Professor C. Gleason
Staff: J. Sheehan (Technician), L. Stec (Administrative Assistant)

The Physics and Astronomy Department offers a bachelor of arts degree in Astronomy as well as minors in Astronomy and in Astrophysics. The astronomy major is appropriate for students interested in careers such as teacher of earth science, planetarium director, science museum educator, science writing, and historian of science. Students interested in pursuing advanced degrees in astronomy are advised to major in Physics and minor in Astrophysics. Example 4-year schedules are available on the Department of Physics & Astronomy website.

Common Curriculum (CC) Courses

Courses numbered in the 050's are designed particularly for non-science majors seeking to satisfy Common Curriculum requirements, and all of these courses carry Common Curriculum credit. These courses may count toward the major in astronomy or the interdepartmental major (see requirements for the Astronomy, B.A. major and Astronomy (ID), B.A. ID major), but they may not be counted toward the major in physics or toward any other science or engineering major.

Course Selection Guidelines

Placement: Students who score a grade of 4 or 5 on the Advanced Placement C-exam (mechanics and/or electromagnetics), an A on the physics A-levels, a 5 or above on the Higher Level or a 6 or above on the standard exam of the International Baccalaureate (provided they earn the IB diploma), may be given credit for up to a maximum of two courses (PHY 120 and/or PHY 121). If a student does not earn the IB diploma, they will be given credit only if they pass the higher level exam with a grade of 6 or above. Students who score a grade of 4 or 5 on both the Physics 1 and Physics 2 AP exams will earn one SET credit in Physics.

Courses Suitable for Non-Majors: The following courses are designed to fulfill the Science and Technology Common Curriculum requirement (some of these courses have labs and some do not): AST 050 , AST 051 , AST 052 , and AST 058 . Other courses suitable for selected non-majors include, AST 150 , AST 200 , AST 210 , AST 220 , AST 230 , and AST 240 .

Prerequisites: There are no placement test requirements for courses in the Department of Physics and Astronomy. All courses numbered above 100 have prerequisites. Please review the course descriptions below and listed under Physics to identify the requirements.

Astronomy (ID), B.A.

Requirements for the Interdepartmental Major:

Students taking physics or astronomy as part of an 8-6 interdepartmental major program can choose from either a conceptual or a calculus track. Suitable choices of courses numbered in the 50s, as well as independent study courses 495-498, can count toward the *conceptual track* ID major (such as Arts and Astronomy or History of Astronomy). Suitable choices of courses numbered 100 or greater can count toward a *calculus track* ID major (such as Astrobiology or Geophysics). For any of these ID majors, a written proposal must be submitted by the student, in consultation with their faculty advisor, for approval by the Department of Physics and Astronomy.

Astronomy Minor

Requirements for the Minor:

The Department of Physics and Astronomy offers academic minors in physics, astronomy, and astrophysics.

Note: Physics majors are recommended to minor in Astrophysics rather than Astronomy.

Students wishing to minor in Astronomy should take:

Required core course:

AST 051 - Introduction to Astronomy

Course Units: 1.0 A descriptive review of current knowledge in astronomy, including methods of measurement and the applications of physics to astronomy. Topics include stars (structure, formation, and evolution), galaxies, and the universe. Evening laboratory sessions in which students learn how to use cameras and telescopes. No background in mathematics or physics required. **Corequisite(s):** AST 051L **CC:** SCLB, GNPS

Choose a core physics group sequence

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

OR

PHY 110 - Physics for the Life Sciences 1

Course Units: 1.0 An introduction to classical mechanics, fluids, and thermodynamics with applications in the life sciences. Students must major in a life science or be admitted by permission of the instructor. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **Corequisite(s):** PHY 110L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

PHY 111 - Physics for the Life Sciences 2

Course Units: 1.0 An introduction to electromagnetism, optics, and the structure of matter with applications in the life sciences. **Prerequisite(s):** PHY 110 , PHY 120 ,MTH 102 , MTH 112 ,or MTH 113 **Corequisite(s):** PHY 111L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

Choose one from the following:

AST 050 - The Solar System

Course Units: 1.0 An introductory but detailed discussion of the solar system with special emphasis on the application of physics and the measurement of fundamental properties. Topics include the contents of the solar system (earth, moon, sun, planets, asteroids, comets), formation of the solar system, evolutionary processes (cratering, volcanism, tidal effects), extrasolar planetary systems, and possibilities of life on other planets. Labs will be performed in which students learn how to find and observe the planets and measure fundamental properties. No background in mathematics or physics required. **Corequisite(s):** AST 050L **CC:** SCLB, SET, GNPS **ISP:** STS

AST 250 - Planetary Science

Course Units: 1 An introduction to the field of planetary science, with an emphasis on a scientific understanding of the Solar System. Topics include: formation and evolution of the Solar System; Kepler's Laws and orbits; physical processes in the Solar System; planetary geology and atmospheres; properties of planets, satellites,; asteroids and comets; extra solar planets; habitability. **Prerequisite(s):** PHY 120 , IMP 120 or 200-level GEO course.

GEO 303 - Earthquakes and the study of the Earth's Interior

Course Units: 1.0 In this course students will learn about the various geophysical methods used to probe the Earth's interior. With a heavy focus on earthquakes and seismology, the course explores the question of how we learn about the Earth beneath our feet. Through the hands-on use of modern geophysical field equipment we will explore the deep and shallow structure of the whole earth. We will learn about finding geological resources and about the physical explanations for plate tectonics. We will also examine how radioactivity and heat flow within the earth can tell us about our warming climate. A common thread throughout the course is computer modeling, data acquisition, signal processing and associated uncertainties. By the end of the course, students will have a familiarity with the differences between the many geophysical surveying methods and the different cases in which they could be employed. **Prerequisite(s):** Any 100-level geosciences or physics course or ENS 100 **Corequisite(s):** GEO 303L **ISP:** ENS

Choose two additional courses:

AST 052 - Relativity, Black Holes, and Quasars

Course Units: 1.0 A descriptive introduction to Einstein's theories of Special and General Relativity, with applications to the astrophysical phenomena of black holes and quasars. No background in mathematics or physics required. **CC:** SET

AST 058 - Astrobiology: Life in the Universe

Course Units: 1.0 Does life exist elsewhere in the universe, or are we alone? The emerging science of astrobiology attempts to answer this fundamental question using an interdisciplinary approach rooted in biology and astronomy. This course will examine the current state of our scientific knowledge concerning the possibility of life elsewhere in the universe. Topics include: the nature and origin of life on Earth, the possibility of life on Mars and elsewhere in the

Solar System, the search for extrasolar planets, the habitability of planets, and the search for extraterrestrial intelligence. **CC:** SET **ISP:** STS

AST 200 - Stellar Structure and Evolution

Course Units: 1.0 An examination of the physical principles governing the structure and evolution of stars. Topics include radiation laws, and the determination of stellar temperature, luminosity, and composition; radiative transfer and the interior structure of stars; nuclear fusion and nucleosynthesis; star clusters and stellar evolution; and stellar remnants (white dwarfs, neutron stars, pulsars, and black holes). **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121

AST 210 - Galaxies

Course Units: 1.0 A survey of the physical properties, dynamics, and distribution of galaxies. Topics include the content, formation, and evolution of the Milky Way and other galaxies; the large-scale distribution of galaxies; interactions between galaxies; dark matter; active galactic nuclei; and quasars. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 113 or IMP 121 .

AST 220 - Cosmology and General Relativity

Course Units: 1.0 A detailed study of the universe. Topics include an introduction to general relativity; the shape, size, age, and future of the universe; models of the primordial universe, including the Big Bang Theory and the Inflation Theory; the origin of the elements; dark matter; the cosmic background radiation; and the formation of galaxies. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 , and MTH 115 . PHY 122 is recommended.

AST 230 - Observational Astronomy

Course Units: 1.0 A laboratory-based course dealing with modern astronomical techniques. The course work will involve primarily nighttime observations with a 20-inch telescope and computer analysis of the data. Techniques covered include CCD observations, sky subtraction, spectroscopy, and photometry. Student projects may include determination of the distances and ages of star clusters; measurements of the variability of stars and of quasars; measurements of the masses of Jupiter, binary star systems, and galaxies; and determination of orbits of asteroids. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 113 or IMP 121 or permission of the instructor (with some telescope experience). **CC:** WAC, WAC-R

AST 240 - Radio Astronomy

Course Units: 1.0 A laboratory-based course in the observing methods and the astrophysics learned from astronomical studies at radio wavelengths. Topics include the operation of a radio telescope; important emission mechanisms; star formation regions; interstellar gas; interstellar molecular clouds; radio galaxies; and the cosmic microwave background. Student projects will involve observations with Union's 2-meter radio telescope and with the 37-meter radio telescope at the Haystack Observatory in Westford, Massachusetts. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 ; Recommended: MTH 115

PHY 122 - Relativity, Quantum, and Their Applications

Course Units: 1.0 Calculus-based introduction to the structure of matter, including quantum effects, particle, nuclear, atomic, molecular, and solid state physics, and applications to materials of interest to engineers and scientists. **Prerequisite(s):** PHY 121 IMP 113 or IMP 121 . **Corequisite(s):** PHY-122L **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

PHY 123 - Heat and Light

Course Units: 1.0 Calculus-based introduction to thermodynamics, geometric and physical optics, and astrophysics. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 121 or IMP 121 . **CC:** ENS

PHY 495 - Physics Independent Study 1

Course Units: 1.0 Topic to be chosen in consultation with a faculty member and the student's advisor.

***Three-term Astronomy practicum option (one-credit is earned upon completion of AST-292)**

AST 290 - Astronomy Practicum 1

Course Units: 0.0 Available to students on an individual basis, students undertake activities that provide on-the- job experience relevant to possible careers for astronomy majors. The particular set of experiences for each term is chosen by the student in consultation with the academic advisor and Department. The activities available include, but are not limited to: internship with the planetarium at the Schenectady Museum or with the Dudley Observatory; running monthly open houses at the Union College Observatory; writing regular science columns for the college newspaper; giving presentations at the bi-weekly Astronomy News Discussion group in the Physics and Astronomy Department; and undertaking a research-oriented independent study in astronomy under the supervision of a professor. Each term is graded on a pass-fail basis with one course credit granted after completion of three terms. To receive a passing grade, the student is expected to work the equivalent of four hours per week and submit a summary report at the end of each term.

AST 291 - Astronomy Practicum 2

Course Units: 0.0 Available to students on an individual basis, students undertake activities that provide on-the- job experience relevant to possible careers for astronomy majors. The particular set of experiences for each term is chosen by the student in consultation with the academic advisor and Department. The activities available include, but are not limited to: internship with the planetarium at the Schenectady Museum or with the Dudley Observatory; running monthly open houses at the Union College Observatory; writing regular science columns for the college newspaper; giving presentations at the bi-weekly Astronomy News Discussion group in the Physics and Astronomy Department; and undertaking a research-oriented independent study in astronomy under the supervision of a professor. Each term is graded on a pass-fail basis with one course credit granted after completion of three terms. To receive a passing grade, the student is expected to work the equivalent of four hours per week and submit a summary report at the end of each term.

AST 292 - Astronomy Practicum 3

Course Units: 0.0 Available to students on an individual basis, students undertake activities that provide on-the- job experience relevant to possible careers for astronomy majors. The particular set of experiences for each term is chosen by the student in consultation with the academic advisor and Department. The activities available include, but are not limited to: internship with the planetarium at the Schenectady Museum or with the Dudley Observatory; running monthly open houses at the Union College Observatory; writing regular science columns for the college newspaper; giving presentations at the bi-weekly Astronomy News Discussion group in the Physics and Astronomy Department; and undertaking a research-oriented independent study in astronomy under the supervision of a professor. Each term is graded on a pass-fail basis with one course credit granted after completion of three terms. To receive a passing grade, the student is expected to work the equivalent of four hours per week and submit a summary report at the end of each term.

Astronomy, B.A.

Requirements for the Astronomy Major:

Two-course sequence in introductory physics:

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

OR

PHY 110 - Physics for the Life Sciences 1

Course Units: 1.0 An introduction to classical mechanics, fluids, and thermodynamics with applications in the life sciences. Students must major in a life science or be admitted by permission of the instructor. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **Corequisite(s):** PHY 110L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

PHY 111 - Physics for the Life Sciences 2

Course Units: 1.0 An introduction to electromagnetism, optics, and the structure of matter with applications in the life sciences. **Prerequisite(s):** PHY 110 , PHY 120 ,MTH 102 , MTH 112 ,or MTH 113 **Corequisite(s):** PHY 111L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

Two-course sequence in science

PHY 122 - Relativity, Quantum, and Their Applications

Course Units: 1.0 Calculus-based introduction to the structure of matter, including quantum effects, particle, nuclear, atomic, molecular, and solid state physics, and applications to materials of interest to engineers and scientists. **Prerequisite(s):** PHY 121 IMP 113 or IMP 121 . **Corequisite(s):** PHY-122L **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

PHY 123 - Heat and Light

Course Units: 1.0 Calculus-based introduction to thermodynamics, geometric and physical optics, and astrophysics. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 121 or IMP 121 . **CC:** ENS

OR

BIO 103 - Diversity of Life: Heredity, Evolution, and Ecology

Course Units: 1.0 More than 3.5 billion years of evolution have resulted in the astonishing diversity of life on earth. This course will explore biodiversity through the lens of ecology, evolution, and heredity, and will investigate various topics, including: the history of life on Earth, evolutionary change, Mendelian & non-Mendelian inheritance, as well as human impacts on biodiversity and ecological functioning. These processes will be studied in the lab using animal model systems, computer simulations, observations of diversity, and molecular techniques. Students will learn experimental design, data analysis, scientific writing, and various laboratory skills during weekly lab sessions. **Corequisite(s):** BIO 103L **CC:** SCLB, GNPS **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 104. **ISP:** ENS

BIO 104 - Cellular Foundations of Life

Course Units: 1.0 The cell is the basic unit of life. From single-celled to multicellular organisms, the cell must transform energy to survive, interact with its environment and reproduce itself. Different types of cells have different functions, and those specialized functions are exhibited in the signals they send and receive, the genes they express and ultimately the biochemical reactions they regulate. Thus, the arrangement and actions of biologically important molecules organize into functioning cellular systems and work together to carry out these important life processes. Required weekly laboratory sessions will introduce students to important tools and methods used by biologists and employ them to investigate biochemical and cellular processes and develop skills with scientific investigation including distinguishing theories and hypotheses, generating and testing hypotheses and analyzing data. **Corequisite(s):** BIO 104L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 103.

OR

CHM 101 - Introductory Chemistry 1

Course Units: 1.0 This is an introductory course that focuses on atomic and molecular structure, chemical bonding, stoichiometry, aqueous chemical reactions, and the properties of gases, liquids, solids and solutions. **Prerequisite(s):** Not open to students who have scored 4 or 5 on the AP Chemistry Exam or who have completed CHM 110H . All students who wish to enroll in an introductory chemistry course must take a placement examination to determine the appropriate course. See Course Selection Guidelines for more information on placement. **Corequisite(s):** CHM 101L **CC:** SCLB **Lecture/Lab Hours** Three lab hours/week,6/10 weeks. **ISP:** ENS

CHM 102 - Introductory Chemistry 2

Course Units: 1.0 A continuation of CHM 101 , focusing on thermodynamics, chemical kinetics, chemical equilibrium, acids and bases, electrochemistry, and an introduction to organic chemistry. **Prerequisite(s):** CHM 101 or placement via the placement exam. **Corequisite(s):** CHM 102L **Prereq/Corequisite(s):** Not open to students who have taken CHM 110H . **CC:** SCLB, GNPS **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

OR

GEO 110 - Introduction to Geosciences

Course Units: 1.0 Examination of Earth materials and processes: How our dynamic planet works including plate tectonics, geologic age determination, processes that form the rocks we see at the Earth's surface, development of the stunning variety of landscapes we see, and other topics of contemporary interest including floods, underground water resources, coastal erosion, earthquakes, landslides, volcanoes, and climate change. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 110L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 120 - The Story of Earth and Life

Course Units: 1.0 An investigation of Earth's dynamic history and evolutionary changes over the past 4.5 billion years. Topics include impacts of climate change, the evolution of life, major changes in the nature of Earth's atmosphere and oceans, and for major mountain building events that have affected the continents as well as the evolutionary development of plant and animal life as recorded in the geologic record. Specific topics include the origin of life, mass extinctions of dinosaurs and other organisms, paleoclimate, and the geologic history of New York State. The link between geology, chemical cycles and life is highlighted, as is the relation of past biogeochemical changes to current global environmental change. Field trips during lab investigate local geologic history and the course may require a weekend field trip. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 120L **CC:** SCLB, GNPS, SET **ISP:** ENS, STS

Core astronomy courses:

Take one of the following:

AST 051 - Introduction to Astronomy

Course Units: 1.0 A descriptive review of current knowledge in astronomy, including methods of measurement and the applications of physics to astronomy. Topics include stars (structure, formation, and evolution), galaxies, and the universe. Evening laboratory sessions in which students learn how to use cameras and telescopes. No background in mathematics or physics required. **Corequisite(s):** AST 051L **CC:** SCLB, GNPS

AST 100 - Introduction to Astrophysics

Course Units: 1.0 An introduction to the field of astrophysics, with an emphasis on a scientific understanding of stars and the universe. Topics include stars (structure, formation, and evolution), galaxies (the Milky Way, galaxy types, quasars, and active galaxies), dark matter, and the Big Bang model of the universe. One hour mathematics/computational lab each week. **Prerequisite(s):** PHY 110 or PHY 120 or IMP 120

Take one of the following:

AST 050 - The Solar System

Course Units: 1.0 An introductory but detailed discussion of the solar system with special emphasis on the application of physics and the measurement of fundamental properties. Topics include the contents of the solar system (earth, moon, sun, planets, asteroids, comets), formation of the solar system, evolutionary processes (cratering, volcanism, tidal effects), extrasolar planetary systems, and possibilities of life on other planets. Labs will be performed in which students learn how to find and observe the planets and measure fundamental properties. No background in mathematics or physics required. **Corequisite(s):** AST 050L **CC:** SCLB, SET, GNPS **ISP:** STS

AST 250 - Planetary Science

Course Units: 1 An introduction to the field of planetary science, with an emphasis on a scientific understanding of the Solar System. Topics include: formation and evolution of the Solar System; Kepler's Laws and orbits; physical processes in the Solar System; planetary geology and atmospheres; properties of planets, satellites,; asteroids and comets; extra solar planets; habitability. **Prerequisite(s):** PHY 120 , IMP 120 or 200-level GEO course.

GEO 303 - Earthquakes and the study of the Earth's Interior

Course Units: 1.0 In this course students will learn about the various geophysical methods used to probe the Earth's interior. With a heavy focus on earthquakes and seismology, the course explores the question of how we learn about the Earth beneath our feet. Through the hands-on use of modern geophysical field equipment we will explore the deep and shallow structure of the whole earth. We will learn about finding geological resources and about the physical explanations for plate tectonics. We will also examine how radioactivity and heat flow within the earth can tell us about our warming climate. A common thread throughout the course is computer modeling, data acquisition, signal processing and associated uncertainties. By the end of the course, students will have a familiarity with the differences between the many geophysical surveying methods and the different cases in which they could be employed. **Prerequisite(s):** Any 100-level geosciences or physics course or ENS 100 **Corequisite(s):** GEO 303L **ISP:** ENS

Take one of the following:

AST 230 - Observational Astronomy

Course Units: 1.0 A laboratory-based course dealing with modern astronomical techniques. The course work will involve primarily nighttime observations with a 20-inch telescope and computer analysis of the data. Techniques covered include CCD observations, sky subtraction, spectroscopy, and photometry. Student projects may include determination of the distances and ages of star clusters; measurements of the variability of stars and of quasars; measurements of the masses of Jupiter, binary star systems, and galaxies; and determination of orbits of asteroids. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 113 or IMP 121 or permission of the instructor (with some telescope experience). **CC:** WAC, WAC-R

AST 240 - Radio Astronomy

Course Units: 1.0 A laboratory-based course in the observing methods and the astrophysics learned from astronomical studies at radio wavelengths. Topics include the operation of a radio telescope; important emission mechanisms; star formation regions; interstellar gas; interstellar molecular clouds; radio galaxies; and the cosmic microwave background. Student projects will involve observations with Union's 2-meter radio telescope and with the 37-meter radio telescope at the Haystack Observatory in Westford, Massachusetts. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 ; Recommended: MTH 115

Three courses selected from the following:

*Courses must be chosen in consultation with department advisor; courses must be unique, no double counting permitted.

PHY 230 - Intermediate Classical Mechanics

Course Units: 1.0 An analytical treatment of classical mechanics. Topics include motion of a particle in one, two, and three dimensions; planetary motion; collision theory; moving coordinate systems; dynamics of rigid bodies; and the Lagrangian form of the equations of motion. **Prerequisite(s):** PHY 110 or PHY 120 or IMP 120 **Prereq/Corequisite(s):** MTH 117 (pre- or co-requisite), or permission of the instructor. **Lecture/Lab Hours** One hour computational lab each week.

AST 052 - Relativity, Black Holes, and Quasars

Course Units: 1.0 A descriptive introduction to Einstein's theories of Special and General Relativity, with applications to the astrophysical phenomena of black holes and quasars. No background in mathematics or physics required. **CC:** SET

AST 058 - Astrobiology: Life in the Universe

Course Units: 1.0 Does life exist elsewhere in the universe, or are we alone? The emerging science of astrobiology attempts to answer this fundamental question using an interdisciplinary approach rooted in biology and astronomy. This course will examine the current state of our scientific knowledge concerning the possibility of life elsewhere in the universe. Topics include: the nature and origin of life on Earth, the possibility of life on Mars and elsewhere in the Solar System, the search for extrasolar planets, the habitability of planets, and the search for extraterrestrial intelligence. **CC:** SET **ISP:** STS

AST 200 - Stellar Structure and Evolution

Course Units: 1.0 An examination of the physical principles governing the structure and evolution of stars. Topics include radiation laws, and the determination of stellar temperature, luminosity, and composition; radiative transfer and the interior structure of stars; nuclear fusion and nucleosynthesis; star clusters and stellar evolution; and stellar remnants (white dwarfs, neutron stars, pulsars, and black holes). **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121

AST 210 - Galaxies

Course Units: 1.0 A survey of the physical properties, dynamics, and distribution of galaxies. Topics include the content, formation, and evolution of the Milky Way and other galaxies; the large-scale distribution of galaxies; interactions between galaxies; dark matter; active galactic nuclei; and quasars. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 113 or IMP 121 .

AST 220 - Cosmology and General Relativity

Course Units: 1.0 A detailed study of the universe. Topics include an introduction to general relativity; the shape, size, age, and future of the universe; models of the primordial universe, including the Big Bang Theory and the Inflation Theory; the origin of the elements; dark matter; the cosmic background radiation; and the formation of galaxies. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 , and MTH 115 . PHY 122 is recommended.

AST 230 - Observational Astronomy

Course Units: 1.0 A laboratory-based course dealing with modern astronomical techniques. The course work will involve primarily nighttime observations with a 20-inch telescope and computer analysis of the data. Techniques covered include CCD observations, sky subtraction, spectroscopy, and photometry. Student projects may include determination of the distances and ages of star clusters; measurements of the variability of stars and of quasars; measurements of the masses of Jupiter, binary star systems, and galaxies; and determination of orbits of asteroids. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 113 or IMP 121 or permission of the instructor (with some telescope experience). **CC:** WAC, WAC-R

AST 240 - Radio Astronomy

Course Units: 1.0 A laboratory-based course in the observing methods and the astrophysics learned from astronomical studies at radio wavelengths. Topics include the operation of a radio telescope; important emission mechanisms; star formation regions; interstellar gas; interstellar molecular clouds; radio galaxies; and the cosmic microwave background. Student projects will involve observations with Union's 2-meter radio telescope and with the 37-meter radio telescope at the Haystack Observatory in Westford, Massachusetts. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 ; Recommended: MTH 115

***Three-term Astronomy practicum option (one-credit earned upon completion of AST-292)**

AST 290 - Astronomy Practicum 1

Course Units: 0.0 Available to students on an individual basis, students undertake activities that provide on-the- job experience relevant to possible careers for astronomy majors. The particular set of experiences for each term is chosen by the student in consultation with the academic advisor and Department. The activities available include, but are not limited to: internship with the planetarium at the Schenectady Museum or with the Dudley Observatory; running monthly open houses at the Union College Observatory; writing regular science columns for the college newspaper; giving presentations at the bi-weekly Astronomy News Discussion group in the Physics and Astronomy Department; and undertaking a research-oriented independent study in astronomy under the supervision of a professor. Each term is graded on a pass-fail basis with one course credit granted after completion of three terms. To receive a passing grade, the student is expected to work the equivalent of four hours per week and submit a summary report at the end of each term.

AST 291 - Astronomy Practicum 2

Course Units: 0.0 Available to students on an individual basis, students undertake activities that provide on-the- job experience relevant to possible careers for astronomy majors. The particular set of experiences for each term is chosen by the student in consultation with the academic advisor and Department. The activities available include, but are not limited to: internship with the planetarium at the Schenectady Museum or with the Dudley Observatory; running monthly open houses at the Union College Observatory; writing regular science columns for the college newspaper; giving presentations at the bi-weekly Astronomy News Discussion group in the Physics and Astronomy Department; and undertaking a research-oriented independent study in astronomy under the supervision of a professor. Each term is graded on a pass-fail basis with one course credit granted after completion of three terms. To receive a passing grade, the student is expected to work the equivalent of four hours per week and submit a summary report at the end of each term.

AST 292 - Astronomy Practicum 3

Course Units: 0.0 Available to students on an individual basis, students undertake activities that provide on-the- job experience relevant to possible careers for astronomy majors. The particular set of experiences for each term is chosen by the student in consultation with the academic advisor and Department. The activities available include, but are not limited to: internship with the planetarium at the Schenectady Museum or with the Dudley Observatory; running monthly open houses at the Union College Observatory; writing regular science columns for the college newspaper; giving presentations at the bi-weekly Astronomy News Discussion group in the Physics and Astronomy Department; and undertaking a research-oriented independent study in astronomy under the supervision of a professor. Each term is graded on a pass-fail basis with one course credit granted after completion of three terms. To receive a passing grade, the student is expected to work the equivalent of four hours per week and submit a summary report at the end of each term.

Physics 010 Requirement

A passing grade in PHY 010 (zero credit) is required for **all** students completing their WS requirement.

Senior Writing (WS) Requirement

Astronomy majors may fulfill the Senior Writing (WS) requirement in the following options: completing a physics one-term or the physics two-term senior thesis option; thesis research in **another department** if an ID or double major may also satisfy this requirement; or by special permission of the instructor and department through an additional writing component added to an upper-level course.

One-Term Thesis Option:

PHY 493 - Physics Senior Writing Project

Course Units: 1.0 The student will normally begin a research project by the fall of the senior year under the supervision of a faculty member; interested students are encouraged to begin research projects earlier in their studies. All students involved in research will meet together once a week with a faculty member who will organize oral reports by the students based on their progress. A written report is required on completion of the project. **Corequisite(s):** Fall term students attend PHY 490 Lectures. **CC:** WS

Two-Term Thesis Option:

PHY 490 - Physics Two-Term Senior Thesis 1

Course Units: 0.0 The student will normally begin a research project by the fall of the senior year under the supervision of a faculty member; interested students are encouraged to begin research projects earlier in their studies. All students involved in research will meet together once a week with a faculty member who will organize oral reports by the students based on their progress. A written report is required on completion of the project. **Prereq/Corequisite(s):** Completion of PHY 491 earns the total credits.

PHY 491 - Physics Two-Term Senior Thesis 2

Course Units: 2.0 The student will normally begin a research project by the fall of the senior year under the supervision of a faculty member; interested students are encouraged to begin research projects earlier in their studies. All students involved in research will meet together once a week with a faculty member who will organize oral reports by the students based on their progress. A written report is required on completion of the project. **Prerequisite(s):** PHY 490 **CC:** WS

Additional Requirements

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

- One science course outside the department (if all other requirements are fulfilled only in Physics and Astronomy Department).
- Students are expected to attend the weekly departmental colloquium series to gain an appreciation for current research in physics related areas.
  **Students wishing to pursue graduate work in astronomy are advised to major in physics and minor in astrophysics.*

Requirements for Honors in Physics and Astronomy:

In addition to the requirements for the major, the student must take PHY 491, submit an honors thesis, and satisfy College requirements for departmental honors.

Astrophysics Minor

Requirements for the Minor:

The Department of Physics and Astronomy offers academic minors in physics, astronomy, and astrophysics.

Students wishing to minor in Astrophysics should take

AST 250 - Planetary Science

Course Units: 1 An introduction to the field of planetary science, with an emphasis on a scientific understanding of the Solar System. Topics include: formation and evolution of the Solar System; Kepler's Laws and orbits; physical processes in the Solar System; planetary geology and atmospheres; properties of planets, satellites,; asteroids and comets; extra solar planets; habitability. **Prerequisite(s):** PHY 120 , IMP 120 or 200-level GEO course.

or

GEO 303 - Earthquakes and the study of the Earth's Interior

Course Units: 1.0 In this course students will learn about the various geophysical methods used to probe the Earth's interior. With a heavy focus on earthquakes and seismology, the course explores the question of how we learn about the Earth beneath our feet. Through the hands-on use of modern geophysical field equipment we will explore the deep and shallow structure of the whole earth. We will learn about finding geological resources and about the physical explanations for plate tectonics. We will also examine how radioactivity and heat flow within the earth can tell us about our warming climate. A common thread throughout the course is computer modeling, data acquisition, signal processing and associated uncertainties. By the end of the course, students will have a familiarity with the differences between the many geophysical surveying methods and the different cases in which they could be employed. **Prerequisite(s):** Any 100-level geosciences or physics course or ENS 100 **Corequisite(s):** GEO 303L **ISP:** ENS

And five courses selected from

AST 100 - Introduction to Astrophysics

Course Units: 1.0 An introduction to the field of astrophysics, with an emphasis on a scientific understanding of stars and the universe. Topics include stars (structure, formation, and evolution), galaxies (the Milky Way, galaxy types, quasars, and active galaxies), dark matter, and the Big Bang model of the universe. One hour mathematics/computational lab each week. **Prerequisite(s):** PHY 110 or PHY 120 or IMP 120

AST 200 - Stellar Structure and Evolution

Course Units: 1.0 An examination of the physical principles governing the structure and evolution of stars. Topics include radiation laws, and the determination of stellar temperature, luminosity, and composition; radiative transfer and the interior structure of stars; nuclear fusion and nucleosynthesis; star clusters and stellar evolution; and stellar remnants (white dwarfs, neutron stars, pulsars, and black holes). **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121

AST 210 - Galaxies

Course Units: 1.0 A survey of the physical properties, dynamics, and distribution of galaxies. Topics include the content, formation, and evolution of the Milky Way and other galaxies; the large-scale distribution of galaxies; interactions between galaxies; dark matter; active galactic nuclei; and quasars. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 113 or IMP 121 .

AST 220 - Cosmology and General Relativity

Course Units: 1.0 A detailed study of the universe. Topics include an introduction to general relativity; the shape, size, age, and future of the universe; models of the primordial universe, including the Big Bang Theory and the Inflation Theory; the origin of the elements; dark matter; the cosmic background radiation; and the formation of galaxies. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 , and MTH 115 . PHY 122 is recommended.

AST 230 - Observational Astronomy

Course Units: 1.0 A laboratory-based course dealing with modern astronomical techniques. The course work will involve primarily nighttime observations with a 20-inch telescope and computer analysis of the data. Techniques covered include CCD observations, sky subtraction, spectroscopy, and photometry. Student projects may include determination of the distances and ages of star clusters; measurements of the variability of stars and of quasars; measurements of the masses of Jupiter, binary star systems, and galaxies; and determination of orbits of asteroids. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 113 or IMP 121 or permission of the instructor (with some telescope experience). **CC:** WAC, WAC-R

AST 240 - Radio Astronomy

Course Units: 1.0 A laboratory-based course in the observing methods and the astrophysics learned from astronomical studies at radio wavelengths. Topics include the operation of a radio telescope; important emission mechanisms; star formation regions; interstellar gas; interstellar molecular clouds; radio galaxies; and the cosmic microwave background. Student projects will involve observations with Union's 2-meter radio telescope and with the 37-meter radio telescope at the Haystack Observatory in Westford, Massachusetts. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 ; Recommended: MTH 115

Biochemistry

Directors: Senior Lecturer B. Cohen (Biology); Professor J. Kehlbeck (Chemistry)
Faculty: Professors S. Horton (Biology) K. Fox (Chemistry); Associate Professor N. Theodosiou (Biology); Assistant Professor C. Connelly (Chemistry)

Course Selection Guidelines

Courses for non-majors:
BCH 335 is a survey course for non-biochemistry majors who have fulfilled the necessary prerequisites as listed below. It is not appropriate for non-science majors looking to fulfill Common Curriculum requirements. Students who have completed BCH 335 cannot enroll in BCH 380 or BCH 382 and vice-versa.

Senior Writing Requirement:
The senior writing requirement may be fulfilled in several ways:

1. By completing a senior thesis in conjunction with senior research (BCH 491 , BCH 492 , BCH 493).
2. By selecting the biology senior seminar that emphasizes cellular/molecular topics, BIO 489 .
3. Only in the event that neither of the above options is available, a student could satisfy the WS requirement by writing a research paper requiring extensive background reading in conjunction with taking BIO 380 , CHM 382 or one of the upper level, molecularly-based biochemistry electives, in addition to the regular course work. Students pursuing this option must consult the Director of Biochemistry before the beginning of the senior year to make arrangements.

Requirements for the Minor and Interdepartmental Majors:
It is not permitted to minor in biochemistry. The ID major in which biochemistry is a component is not normally available.

Double counting of courses between the Biochemistry major and other majors and minors:

Double counting courses between the Biochemistry major and other majors and minors must be approved by the Biochemistry program director.

Biochemistry, B.S.

Requirements for the Major

Nine courses in Biology and Chemistry:

Biology

Introductory Biology

BIO 103 - Diversity of Life: Heredity, Evolution, and Ecology

Course Units: 1.0 More than 3.5 billion years of evolution have resulted in the astonishing diversity of life on earth. This course will explore biodiversity through the lens of ecology, evolution, and heredity, and will investigate various topics, including: the history of life on Earth, evolutionary change, Mendelian & non-Mendelian inheritance, as well as human impacts on biodiversity and ecological functioning. These processes will be studied in the lab using animal model systems, computer simulations, observations of diversity, and molecular techniques. Students will learn experimental design, data analysis, scientific writing, and various laboratory skills during weekly lab sessions. **Corequisite(s):** BIO 103L **CC:** SCLB, GNPS **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 104. **ISP:** ENS

BIO 104 - Cellular Foundations of Life

Course Units: 1.0 The cell is the basic unit of life. From single-celled to multicellular organisms, the cell must transform energy to survive, interact with its environment and reproduce itself. Different types of cells have different functions, and those specialized functions are exhibited in the signals they send and receive, the genes they express and ultimately the biochemical reactions they regulate. Thus, the arrangement and actions of biologically important molecules organize into functioning cellular systems and work together to carry out these important life processes. Required weekly laboratory sessions will introduce students to important tools and methods used by biologists and employ them to investigate biochemical and cellular processes and develop skills with scientific investigation including distinguishing theories and hypotheses, generating and testing hypotheses and analyzing data. **Corequisite(s):** BIO 104L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 103.

BIO 205 - Topics in Molecular Biology

Course Units: 1.0 In this sophomore level course, students will learn the key concepts of the molecular biology of the cell as well as how to integrate the principles of cell structure and function with the underlying molecular mechanism(s). Discussions will focus on gene structure, mechanisms of replication, transcription and translation, mutation and DNA repair, gene regulations, and genomics. Each of these concepts will be discussed in the context of a unifying theme selected by the instructor. Possible examples of these themes include viruses, epigenetics, human diseases, biotechnology and artificial organisms, cell fate determination and differentiation. **Prerequisite(s):** BIO 103 and BIO 104 . **CC:** SET **Note:** May not be taken simultaneously with BIO 206.

Chemistry

Introductory Chemistry

CHM 101 - Introductory Chemistry 1

Course Units: 1.0 This is an introductory course that focuses on atomic and molecular structure, chemical bonding, stoichiometry, aqueous chemical reactions, and the properties of gases, liquids, solids and solutions. **Prerequisite(s):** Not open to students who have scored 4 or 5 on the AP Chemistry Exam or who have completed CHM 110H . All students who wish to enroll in an introductory chemistry course must take a placement examination to determine the appropriate course. See Course Selection Guidelines for more information on placement. **Corequisite(s):** CHM 101L **CC:** SCLB **Lecture/Lab Hours** Three lab hours/week,6/10 weeks. **ISP:** ENS

CHM 102 - Introductory Chemistry 2

Course Units: 1.0 A continuation of CHM 101 , focusing on thermodynamics, chemical kinetics, chemical equilibrium, acids and bases, electrochemistry, and an introduction to organic chemistry. **Prerequisite(s):** CHM 101 or placement via the placement exam. **Corequisite(s):** CHM 102L **Prereq/Corequisite(s):** Not open to students who have taken CHM 110H . **CC:** SCLB, GNPS **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

or

CHM 110H - Honors Introductory Chemistry

Course Units: 1.0 A laboratory-intensive course that covers the main topics of CHM 101 and CHM 102 and is meant to replace those courses for students who have strong backgrounds in introductory chemistry. **Prerequisite(s):** Students who have scored 4 or 5 on the AP chemistry exam will be automatically placed into CHM 110H; see Course Selection guidelines for more information on placement. **CC:** SCLB, GNPS **ISP:** ENS **Note:** Students who have scored 4 or 5 on the AP chemistry exam or who successfully complete CHM 110H will also receive AP credit for CHM 101 .

Organic Chemistry

CHM 231 - Organic Chemistry 1

Course Units: 1.0 A mechanistic approach to the chemistry of carbon compounds organized around the reactions of functional groups. We cover alkanes, cycloalkanes, alcohols, alkyl halides (nucleophilic substitution and elimination), alkenes (addition and elimination), alkynes, spectroscopy (IR and NMR) and computer molecular modeling. **Prerequisite(s):** CHM 102 or CHM 110H **Corequisite(s):** CHM 231L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

CHM 232 - Organic Chemistry 2

Course Units: 1.0 A continuation of CHM 231 including an emphasis on synthesis, and the chemistry of conjugated and aromatic compounds, carbonyl compounds, and an introduction to important classes of biomolecules. **Prerequisite(s):** CHM 231 **Corequisite(s):** CHM 232L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week.

Upper Level Chemistry

CHM 240 - Analytical Chemistry

Course Units: 1.0 A course that focuses on the quantitative analysis of samples. Classroom and laboratory emphasis on statistical treatment of data, classical and instrumental methods of chemical analysis, and chemical equilibrium.

Prerequisite(s): CHM 231 **Corequisite(s):** CHM 240L **CC:** SCLB, WAC-R **Lecture/Lab Hours** Six lab hours each week. **ISP:** ENS

CHM 351 - Kinetics and Thermodynamics

Course Units: 1.0 Properties of gases; fundamentals of statistical mechanics; fundamentals of thermodynamics including heats of reactions, phase transitions, and chemical equilibria; chemical kinetics. **Prerequisite(s):** CHM 240 , PHY 110 or PHY 120 and MTH 115 or MTH 115H **Corequisite(s):** CHM 351L **CC:** SCLB, WAC **Lecture/Lab Hours** Four lab hours each week.

A two- term biochemistry sequence for biochemistry majors which can be taken in any order:

BCH 380 - Biochemistry: Nucleic Acids, Carbohydrates, and Lipids

Course Units: 1.0 An in-depth investigation into some of the macromolecules which are essential to life's processes. The course focuses on non-protein molecules and their unique chemical properties. **Cross-Listed:** BIO 380 **Prerequisite(s):** BIO 205 and CHM 232 or permission of the instructor. **Corequisite(s):** BCH 380L **Prereq/Corequisite(s):** Not open to students who have completed BCH 335 **CC:** WAC **Lecture/Lab Hours** Three lab hours each week.

BCH 382 - Biochemistry: Structure and Catalysis

Course Units: 1.0 Structure and function of proteins/enzymes including purification, mechanism, kinetics, regulation, metabolism, and a detailed analysis of several classic protein systems. **Cross-Listed:** BIO 382 and CHM 382 **Prerequisite(s):** CHM 232 **Corequisite(s):** BCH 382L **Prereq/Corequisite(s):** Not open to students who have completed BCH 335 . **CC:** SCLB, WAC-R **Lecture/Lab Hours** Four lab hours each week.

In addition, students must have:

Math through and including

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

Physics

PHY 110 - Physics for the Life Sciences 1

Course Units: 1.0 An introduction to classical mechanics, fluids, and thermodynamics with applications in the life sciences. Students must major in a life science or be admitted by permission of the instructor. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **Corequisite(s):** PHY 110L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

PHY 111 - Physics for the Life Sciences 2

Course Units: 1.0 An introduction to electromagnetism, optics, and the structure of matter with applications in the life sciences. **Prerequisite(s):** PHY 110 , PHY 120 ,MTH 102 , MTH 112 ,or MTH 113 **Corequisite(s):** PHY 111L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

or

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

Note: Typically, students complete introductory biology, chemistry and math courses in their first year.

In addition to the courses above, students are required to take 3 additional electives. Two additional Biology courses to be chosen from:

BIO 354 - Developmental Biology w/lab

Course Units: 1.0 The study of the developing embryo is the science of the emergence of living order. With an emphasis on experimental design, we examine cell communication, cell fate, tissue patterning and morphogenesis, and gene expression and regulation explored within the context of experimental organisms. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 354L **CC:** SCLB, WAC, WAC-R **Lecture/Lab Hours** One lab per week.

BIO 355 - Immunology w/lab

Course Units: 1.0 The cellular and molecular basis of immunological specificity, regulatory and effector mechanisms of the mammalian immune response, and the importance of the innate immune system in the initiation and development of adaptive immunity. Laboratory exercises include basic techniques and concepts emphasizing morphological identification of leukocytes, anatomy of mouse lymphoid organs, phagocytosis and bactericidal components of innate immunity, agglutination, enzyme-linked immunosorbent assay (ELISA), analytical flow cytometry, and western blotting. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 355L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 363 - Cellular Neurosciences W/Lab

Course Units: 1 This is a discussion-based course that focuses on reading and presenting primary papers on the pathogenesis of neurological diseases and the latest advances in treatments including iPSCs, organoids, and AI interface. Woven into the discussion will be the social and ethical implication of using cutting-edge technology to combat these intractable diseases. Combined lecture and lab course meets twice/week for 3 hours; with additional laboratory time as needed **Prerequisite(s):** BIO 205 and either BIO 206 or BIO 242 **Corequisite(s):** BIO 363L **CC:** SCLB, WAC, WAC-R

BIO 368 - Advanced Molecular Biology w/lab

Course Units: 1.0 Many of the advances made in medicine and molecular biology have been based on work done in microbial systems. This integrated laboratory course will focus on the discovery and characterization of antibiotic-producing soil microbes, using microbiological and molecular techniques. As part of the Tiny Earth collaboration, students will contribute their findings to a database shared by a network of student researchers from over 700 other institutions around the globe. In addition, we will explore gene expression and gene regulation of antibiotic production and resistance, and how bacterial systems have become advanced tools for the study of these processes. Combined lecture and lab course meets twice/week for 3 hours; Requires 2-3 hours of independent lab work per week. **Prerequisite(s):** BIO 205 and CHM 231 or permission of the instructor. **CC:** SCLB

BIO 384 - Genetics and Molecular Biology w/lab

Course Units: 1.0 The use of both classical genetics and molecular biology as experimental tools is currently being applied to an extremely diverse array of questions in biology. This course will expose the student to many of the commonly-used techniques in the "toolkit" of the geneticist/molecular biologist. Emphasis will be on recent advances in our understanding of topics of current interest such as development, cellular response to environmental stimuli, tumor formation, human genetic disease, circadian rhythms, and mammalian sex determination, amongst others. Laboratory will emphasize the use of modern molecular biological techniques and will involve group projects of the students' choice. **Prerequisite(s):** BIO 205 and CHM 102 or CHM 110H **Corequisite(s):** BIO 384L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

AND THE THIRD TO BE CHOSEN FROM AMONG:

Biology coures in the subcellular or organismal areas (listed below) or one of these courses:

BCH 385 - Advanced Topics in Biochemistry

Course Units: 1 Students will develop the ability to read and understand the biochemical literature while learning about modern methods for probing biochemical functions. **Prereq/Corequisite(s):** BIO 380 , BCH 380 , BCH 382 , or CHM 382

BIO 243 - Bioinformatics: Information Technology in the Life Sciences

Course Units: 1.0 The disciplines of biology and information technology are intersecting with increasing frequency, most notably in the emerging field of bioinformatics. Bioinformatics has been fueled by the advent of large-scale genome sequencing projects, which has generated enormous sets of "mineable" data representing an invaluable resource for biologists. Biology and computer science students in the course will gain a working knowledge of the basic principles of the others' discipline and will then collaborate together in class on bioinformatics projects. Topics include pairwise and multiple sequence alignments, phylogenetic trees, gene expression analysis, and personalized medicine. **Cross-Listed:** CSC 243 **Prerequisite(s):** BIO 205 or a C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , or CSC 108 **CC:** SET **ISP:** STS

BIO 370 - Endocrinology

Course Units: 1.0 Principles of endocrine and neuroendocrine regulation of physiological processes, concentrating on metabolism, growth, and reproduction. **Prerequisite(s):** BIO 205 **CC:** SET

CHM 330 - Medicinal Chemistry

Course Units: 1.0 This course focuses on medicinal chemistry and the underlying principles of organic chemistry. Topics to be covered include drug discovery and approval, lead modification, drug-receptor interactions, structure-activity relationships (SAR), drug delivery, pro-drugs and biomimetics. Physicochemical properties and synthetic approaches to drug families will be emphasized. **Prerequisite(s):** CHM 232 **CC:** SET

CHM 340 - Chemical Instrumentation

Course Units: 1.0 Theory and practice of modern methods of analysis with emphasis on spectroscopic, chromatographic, electrochemical, and surface science techniques, as well as electronic measurements. **Prerequisite(s):** CHM 231 , CHM 240 , and one course in physics or permission of the instructor. **Corequisite(s):** CHM 340L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

Biochemistry: Biological Sciences: Sub-Cellular

BIO 352 - Microbiology w/lab

Course Units: 1.0 An overview of microbiology with emphasis on bacteria and viruses. Lectures will focus on the structural and functional characteristics of prokaryotes, the diversity, growth, and control of bacteria, and the structure and infectious cycle of DNA and RNA viruses, with special attention to those organisms that cause disease in humans. Particularly recommended for students planning careers in medicine and other health-related professions. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 352L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **Note:** Requires 2-3 hours of independent lab work per week.

BIO 354 - Developmental Biology w/lab

Course Units: 1.0 The study of the developing embryo is the science of the emergence of living order. With an emphasis on experimental design, we examine cell communication, cell fate, tissue patterning and morphogenesis, and gene expression and regulation explored within the context of experimental organisms. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 354L **CC:** SCLB, WAC, WAC-R **Lecture/Lab Hours** One lab per week.

BIO 355 - Immunology w/lab

Course Units: 1.0 The cellular and molecular basis of immunological specificity, regulatory and effector mechanisms of the mammalian immune response, and the importance of the innate immune system in the initiation and development of adaptive immunity. Laboratory exercises include basic techniques and concepts emphasizing morphological identification of leukocytes, anatomy of mouse lymphoid organs, phagocytosis and bactericidal components of innate immunity, agglutination, enzyme-linked immunosorbent assay (ELISA), analytical flow cytometry, and western blotting. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 355L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 363 - Cellular Neurosciences W/Lab

Course Units: 1 This is a discussion-based course that focuses on reading and presenting primary papers on the pathogenesis of neurological diseases and the latest advances in treatments including iPSCs, organoids, and AI interface. Woven into the discussion will be the social and ethical implication of using cutting-edge technology to combat these intractable diseases. Combined lecture and lab course meets twice/week for 3 hours; with additional laboratory time as needed **Prerequisite(s):** BIO 205 and either BIO 206 or BIO 242 **Corequisite(s):** BIO 363L **CC:** SCLB, WAC, WAC-R

BIO 368 - Advanced Molecular Biology w/lab

Course Units: 1.0 Many of the advances made in medicine and molecular biology have been based on work done in microbial systems. This integrated laboratory course will focus on the discovery and characterization of antibiotic-producing soil microbes, using microbiological and molecular techniques. As part of the Tiny Earth collaboration, students will contribute their findings to a database shared by a network of student researchers from over 700 other institutions around the globe. In addition, we will explore gene expression and gene regulation of antibiotic production

and resistance, and how bacterial systems have become advanced tools for the study of these processes. Combined lecture and lab course meets twice/week for 3 hours; Requires 2-3 hours of independent lab work per week. **Prerequisite(s):** BIO 205 and CHM 231 or permission of the instructor. **CC:** SCLB

BIO 378 - Cancer Cell Biology

Course Units: 1.0 This course investigates the molecular basis of cancer by comparing normal cells to cancer cells with respect to growth control mechanisms, signal transduction, and cell-cell and cell-environment interactions. A large percent of the content of the course comes from recent research papers which students read and present to the class. Laboratory exercises include primary tissue culture, immunofluorescence microscopy, immunodetection, and a final research project. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 378L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 380 - Biochemistry: Nucleic Acids, Carbohydrates, and Lipids w/lab

Course Units: 1.0 An in-depth investigation into some of the macromolecules that are essential to life's processes. The course focuses on non-protein molecules and their unique chemical properties. **Cross-Listed:** BCH 380 **Prerequisite(s):** BIO 205 and CHM 232 , or permission of the instructor. CHM 232 , or permission of the instructor. **Corequisite(s):** BIO 380L **Prereq/Corequisite(s):** Not open to students who have completed BIO 335 . **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week.

BIO 384 - Genetics and Molecular Biology w/lab

Course Units: 1.0 The use of both classical genetics and molecular biology as experimental tools is currently being applied to an extremely diverse array of questions in biology. This course will expose the student to many of the commonly-used techniques in the "toolkit" of the geneticist/molecular biologist. Emphasis will be on recent advances in our understanding of topics of current interest such as development, cellular response to environmental stimuli, tumor formation, human genetic disease, circadian rhythms, and mammalian sex determination, amongst others. Laboratory will emphasize the use of modern molecular biological techniques and will involve group projects of the students' choice. **Prerequisite(s):** BIO 205 and CHM 102 or CHM 110H **Corequisite(s):** BIO 384L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

Biochemistry: Biological Sciences: Organismal

BIO 314 - Ornithology w/lab

Course Units: 1.0 Birds are excellent subjects to study all levels of biological organization, from biochemistry and genetics through physiology, ecology, and evolution. This course emphasizes the evolution, anatomy, physiology, ecology, and conservation biology of avifauna. Weekly labs will be split between the field to identify birds through sight and sound and the laboratory to learn dissections and study skins. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 314L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 315 - Biology of Plants w/lab

Course Units: 1.0 Students will learn about the major characteristics and innovations of land plants and evaluate the functional and adaptive significance of variants in their form, physiology and life history. **Prerequisite(s):** BIO 103 and BIO 104 or permission of the instructor. **Corequisite(s):** BIO 315L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 317 - Entomology w/lab

Course Units: 1.0 Entomology examines the evolution and diversity of the most important and successful animal group, the insects. This course explores all aspects of insect biology (ecology, evolution, anatomy, physiology, behavior, neurobiology, and endocrinology). **Prerequisite(s):** BIO 103 and BIO 104 **Corequisite(s):** BIO 317L **Prereq/Corequisite(s):** Students will be expected to attend one laboratory per week and mandatory field trips for collecting insects in diverse habitats. **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 319 - Vertebrate Natural History w/lab

Course Units: 1.0 This course explores the biology of vertebrate animals with emphasis on understanding the diversity, life history, taxonomy, and unique adaptations of local vertebrate species (exclusive of fish). The laboratory focuses on developing scientifically sound skills in observation and identification of amphibians, reptiles, mammals, and birds. There will be frequent field trips to observe vertebrates in their natural habitats. Additional meetings will be required for regional field excursions, and for morning bird watching. Students must be available for one evening and one morning field trip. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 319L **CC:** SCLB **ISP:** ENS

BIO 330 - Comparative Animal Physiology w/lab

Course Units: 1.0 A study of internal physiological systems (e.g., respiration, circulation, and muscle systems). Physiological function in a wide variety of animal groups with a strong emphasis on the interaction of organisms with their environment. **Prerequisite(s):** BIO 205 and BIO 206 **Corequisite(s):** BIO 330L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 332 - Comparative Vertebrate Anatomy w/lab

Course Units: 1.0 Comparative analysis of vertebrate structure with emphasis on evolution and function. Laboratories examine vertebrate anatomy through dissections of four groups: mammals, fish, amphibians, and birds. **Prerequisite(s):** BIO 103 , BIO 104 and BIO 206 **Corequisite(s):** BIO 332L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 362 - Experimental Neurobiology w/lab

Course Units: 1.0 This course provides an overview of biological function of animal nervous systems, with an emphasis on specific experimental methods and primary literature underlying this knowledge. Topics include ionic basis of actions potentials, electrophysiology, sensory and motor systems, brain-machine interfaces and the neural basis of animal behavior and navigation. Inquiry-based laboratory exercises include basic techniques in electrophysiology recording and stimulation, fine dissection, fluorescent labeling of neural cells, as well as data analysis, presentation and communication (writing intensive). **Cross-Listed:** PSY 312 **Prerequisite(s):** BIO 205 and either BIO 206 or BIO 242 . **Corequisite(s):** BIO 362L **CC:** SET **Lecture/Lab Hours** One lab per week.

or

BCH 385 - Advanced Topics in Biochemistry

Course Units: 1 Students will develop the ability to read and understand the biochemical literature while learning about modern methods for probing biochemical functions. **Prereq/Corequisite(s):** BIO 380 , BCH 380 , BCH 382 , or CHM 382

Requirements for Honors in Biochemistry

Students eligible for honors in biochemistry must satisfactorily complete a thesis, traditionally based on the results of original research. It is customary, but not required, that students enroll in three honors research courses, typically during the senior year.

In addition students must fulfill the following criteria:

1. have achieved a cumulative index of 3.3 or better
2. have an index of 3.3 or better in courses taken in the major (this dos not include cognate courses in math and physics or grades associated with senior thesis (BIO 491, BIO 492 and BIO 493). At least three of the courses used to calculate the major GPA must have a grade of A- or better
3. Students eligible for honors in biochemistry must satisfactorily complete a thesis, traditionally based on the results of original research, that receives the approval of the subcommittee for biochemistry, on which a grade of not lower than A- has been earned. It is customary, but not required, that students enroll in three honors research courses, typically during the senior year.

Biological Sciences

Chair: Professor Q. Chu-LaGraff
Faculty: Professors J. Corbin, B. L. Fleishman, S. Horton, S. Kirkton R. Lauzon; Associate Professors J. Salvo, N. Theodosiou, R. Yukilevich; Assistant Professors M. DeSiervo, K. Feller, A. Ibrahim, S. Schmeige; Senior Lecturers J. Bishop, B. Cohen: Lecturer S. Gardner; Visiting Assistant Professors M. Sitvarin, S. Subbaram
Staff: A. Dickson (Life Science Technician), C. Geren (Administrative Assistant), A. Kelly (Life Sciences Lab Coordinator)

Biological Sciences (ID), B.S.

Requirements for the Interdepartmental Majors:

Students wishing to declare an interdepartmental major must submit a proposal to the department chair outlining their proposed program of study no later than the second term of their junior year. This program, which must be approved by the chair of the Biology Department, should be written in consultation with advisors from both departments to form a cohesive and integrated major; appropriate courses in mathematics and physical sciences should be included in the proposal. Students who wish to have their interdepartmental major listed as Biology/Other are required to take eight biology courses with at least three 300-level or above. Those wishing to have their interdepartmental major listed as Other/Biology are required to take six biology courses. All of the Biology courses must count for Biology major credit and only one of these may be a research course or independent study. Interdepartmental majors are not required to take one subcellular, one organismal and one population course, although they are strongly encouraged to do so. Unless they have a compelling reason, students interested in BIO/PSY or PSY/BIO ID majors should pursue a Neuroscience major.

Requirements for Honors in Biological Sciences:

Students eligible for departmental honors must fulfill the College-wide criteria and satisfactorily complete a thesis, usually based on the results of original biological research, which receives the approval of the department and appropriate College committee. It is customary, but not required, that research students enroll in three honors research courses, typically during the senior year. Interdepartmental majors must consult with their advisors in both disciplines during their junior year to receive approval for an interdepartmental thesis. The biology component of an interdepartmental thesis will normally incorporate at least one term of biological research.

Biological Sciences Minor

Requirements for the Minor:

Six courses in biology, including:

BIO 103 - Diversity of Life: Heredity, Evolution, and Ecology

Course Units: 1.0 More than 3.5 billion years of evolution have resulted in the astonishing diversity of life on earth. This course will explore biodiversity through the lens of ecology, evolution, and heredity, and will investigate various topics, including: the history of life on Earth, evolutionary change, Mendelian & non-Mendelian inheritance, as well as human impacts on biodiversity and ecological functioning. These processes will be studied in the lab using animal model systems, computer simulations, observations of diversity, and molecular techniques. Students will learn experimental design, data analysis, scientific writing, and various laboratory skills during weekly lab sessions. **Corequisite(s):** BIO 103L **CC:** SCLB, GNPS **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 104. **ISP:** ENS

BIO 104 - Cellular Foundations of Life

Course Units: 1.0 The cell is the basic unit of life. From single-celled to multicellular organisms, the cell must transform energy to survive, interact with its environment and reproduce itself. Different types of cells have different functions, and those specialized functions are exhibited in the signals they send and receive, the genes they express and ultimately the biochemical reactions they regulate. Thus, the arrangement and actions of biologically important molecules organize into functioning cellular systems and work together to carry out these important life processes. Required weekly laboratory sessions will introduce students to important tools and methods used by biologists and employ them to investigate biochemical and cellular processes and develop skills with scientific investigation including distinguishing theories and hypotheses, generating and testing hypotheses and analyzing data. **Corequisite(s):** BIO 104L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 103.

Additional Requirements

The remaining courses must be selected from among those designated for credit toward the biology major. Students are cautioned that many upper-level biology courses require prerequisites (in biology or other science departments) beyond BIO 103 and BIO 104. Therefore, any student who contemplates a biology minor must register at the Biology Department Office and be assigned a departmental advisor. Biology has significant curricular overlap with the interdisciplinary majors that intersect with it (Biochemistry, Neuroscience, Biomedical Engineering, Environmental Science), therefore one cannot major in one of these interdisciplinary majors and minor in Biology. Students with majors outside Division III or in psychology may count one biology CC course toward the minor if it is their first course in the minor.

Biological Sciences, B.S.

Requirements for the Major:

Ten courses in biology, including BIO 103, BIO 104, BIO 205 and BIO 206. Students who have Advanced Placement credit for biology will receive credit for BIO 050, which does not count toward the major or minor, but fulfills the CC Science with Laboratory requirement. The remaining courses must include at least one 300-level laboratory courses in each of the following areas:

Sub-cellular

BIO 352 - Microbiology w/lab

Course Units: 1.0 An overview of microbiology with emphasis on bacteria and viruses. Lectures will focus on the structural and functional characteristics of prokaryotes, the diversity, growth, and control of bacteria, and the structure and infectious cycle of DNA and RNA viruses, with special attention to those organisms that cause disease in humans. Particularly recommended for students planning careers in medicine and other health-related professions. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 352L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **Note:** Requires 2-3 hours of independent lab work per week.

BIO 354 - Developmental Biology w/lab

Course Units: 1.0 The study of the developing embryo is the science of the emergence of living order. With an emphasis on experimental design, we examine cell communication, cell fate, tissue patterning and morphogenesis, and gene expression and regulation explored within the context of experimental organisms. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 354L **CC:** SCLB, WAC, WAC-R **Lecture/Lab Hours** One lab per week.

BIO 355 - Immunology w/lab

Course Units: 1.0 The cellular and molecular basis of immunological specificity, regulatory and effector mechanisms of the mammalian immune response, and the importance of the innate immune system in the initiation and development of adaptive immunity. Laboratory exercises include basic techniques and concepts emphasizing morphological identification of leukocytes, anatomy of mouse lymphoid organs, phagocytosis and bactericidal components of innate immunity, agglutination, enzyme-linked immunosorbent assay (ELISA), analytical flow cytometry, and western blotting. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 355L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 358 - Advanced Cell Biology w/lab

Course Units: 1 In this course, students will delve deep into what makes the cell tick, eventually coming tounderstand and appreciate how all physiology & disease is indeed cell biology. In the laboratory section, students will learn how to form and test hypotheses, in addition to learning various key techniques such as mammalian cell culture, immunodetection, fluorescence microscopy, and quantitative gene expression. **Corequisite(s):** BIO 358L **Prereq/Corequisite(s):** BIO 205

BIO 363 - Cellular Neurosciences W/Lab

Course Units: 1 This is a discussion-based course that focuses on reading and presenting primary papers on the pathogenesis of neurological diseases and the latest advances in treatments including iPSCs, organoids, and AI interface. Woven into the discussion will be the social and ethical implication of using cutting-edge technology to combat these intractable diseases. Combined lecture and lab course meets twice/week for 3 hours; with additional laboratory time as needed **Prerequisite(s):** BIO 205 and either BIO 206 or BIO 242 **Corequisite(s):** BIO 363L **CC:** SCLB, WAC, WAC-R

BIO 368 - Advanced Molecular Biology w/lab

Course Units: 1.0 Many of the advances made in medicine and molecular biology have been based on work done in microbial systems. This integrated laboratory course will focus on the discovery and characterization of antibiotic-producing soil microbes, using microbiological and molecular techniques. As part of the Tiny Earth collaboration, students will contribute their findings to a database shared by a network of student researchers from over 700 other institutions around the globe. In addition, we will explore gene expression and gene regulation of antibiotic production and resistance, and how bacterial systems have become advanced tools for the study of these processes. Combined

lecture and lab course meets twice/week for 3 hours; Requires 2-3 hours of independent lab work per week. **Prerequisite(s):** BIO 205 and CHM 231 or permission of the instructor. **CC:** SCLB

BIO 378 - Cancer Cell Biology

Course Units: 1.0 This course investigates the molecular basis of cancer by comparing normal cells to cancer cells with respect to growth control mechanisms, signal transduction, and cell-cell and cell-environment interactions. A large percent of the content of the course comes from recent research papers which students read and present to the class. Laboratory exercises include primary tissue culture, immunofluorescence microscopy, immunodetection, and a final research project. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 378L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 380 - Biochemistry: Nucleic Acids, Carbohydrates, and Lipids w/lab

Course Units: 1.0 An in-depth investigation into some of the macromolecules that are essential to life's processes. The course focuses on non-protein molecules and their unique chemical properties. **Cross-Listed:** BCH 380 **Prerequisite(s):** BIO 205 and CHM 232 , or permission of the instructor. CHM 232 , or permission of the instructor. **Corequisite(s):** BIO 380L **Prereq/Corequisite(s):** Not open to students who have completed BIO 335 . **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week.

BIO 384 - Genetics and Molecular Biology w/lab

Course Units: 1.0 The use of both classical genetics and molecular biology as experimental tools is currently being applied to an extremely diverse array of questions in biology. This course will expose the student to many of the commonly-used techniques in the "toolkit" of the geneticist/molecular biologist. Emphasis will be on recent advances in our understanding of topics of current interest such as development, cellular response to environmental stimuli, tumor formation, human genetic disease, circadian rhythms, and mammalian sex determination, amongst others. Laboratory will emphasize the use of modern molecular biological techniques and will involve group projects of the students' choice. **Prerequisite(s):** BIO 205 and CHM 102 or CHM 110H **Corequisite(s):** BIO 384L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

Organismal

BIO 314 - Ornithology w/lab

Course Units: 1.0 Birds are excellent subjects to study all levels of biological organization, from biochemistry and genetics through physiology, ecology, and evolution. This course emphasizes the evolution, anatomy, physiology, ecology, and conservation biology of avifauna. Weekly labs will be split between the field to identify birds through sight and sound and the laboratory to learn dissections and study skins. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 314L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 315 - Biology of Plants w/lab

Course Units: 1.0 Students will learn about the major characteristics and innovations of land plants and evaluate the functional and adaptive significance of variants in their form, physiology and life history. **Prerequisite(s):** BIO 103 and BIO 104 or permission of the instructor. **Corequisite(s):** BIO 315L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 317 - Entomology w/lab

Course Units: 1.0 Entomology examines the evolution and diversity of the most important and successful animal group, the insects. This course explores all aspects of insect biology (ecology, evolution, anatomy, physiology, behavior, neurobiology, and endocrinology). **Prerequisite(s):** BIO 103 and BIO 104 **Corequisite(s):** BIO 317L **Prereq/Corequisite(s):** Students will be expected to attend one laboratory per week and mandatory field trips for collecting insects in diverse habitats. **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 319 - Vertebrate Natural History w/lab

Course Units: 1.0 This course explores the biology of vertebrate animals with emphasis on understanding the diversity, life history, taxonomy, and unique adaptations of local vertebrate species (exclusive of fish). The laboratory focuses on developing scientifically sound skills in observation and identification of amphibians, reptiles, mammals, and birds. There will be frequent field trips to observe vertebrates in their natural habitats. Additional meetings will be required for regional field excursions, and for morning bird watching. Students must be available for one evening and one morning field trip. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 319L **CC:** SCLB **ISP:** ENS

BIO 330 - Comparative Animal Physiology w/lab

Course Units: 1.0 A study of internal physiological systems (e.g., respiration, circulation, and muscle systems). Physiological function in a wide variety of animal groups with a strong emphasis on the interaction of organisms with their environment. **Prerequisite(s):** BIO 205 and BIO 206 **Corequisite(s):** BIO 330L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 332 - Comparative Vertebrate Anatomy w/lab

Course Units: 1.0 Comparative analysis of vertebrate structure with emphasis on evolution and function. Laboratories examine vertebrate anatomy through dissections of four groups: mammals, fish, amphibians, and birds. **Prerequisite(s):** BIO 103 , BIO 104 and BIO 206 **Corequisite(s):** BIO 332L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 362 - Experimental Neurobiology w/lab

Course Units: 1.0 This course provides an overview of biological function of animal nervous systems, with an emphasis on specific experimental methods and primary literature underlying this knowledge. Topics include ionic basis of actions potentials, electrophysiology, sensory and motor systems, brain-machine interfaces and the neural basis of animal behavior and navigation. Inquiry-based laboratory exercises include basic techniques in electrophysiology recording and stimulation, fine dissection, fluorescent labeling of neural cells, as well as data analysis, presentation and communication (writing intensive). **Cross-Listed:** PSY 312 **Prerequisite(s):** BIO 205 and either BIO 206 or BIO 242 . **Corequisite(s):** BIO 362L **CC:** SET **Lecture/Lab Hours** One lab per week.

BIO 375 - Exercise Physiology

Course Units: 1.0 This course examines how single and repeated bouts of exercise affect the structure and function of tissues, organs, and systems in humans and other animals. Studenta will be performing exercise activities in the lab portion of the course. **Prerequisite(s):** BIO 205 and BIO 206 **CC:** SET **Lecture/Lab Hours** One lab per week.

Population or community

BIO 320 - Ecology w/lab

Course Units: 1.0 Organisms and their environment, population and community ecology, and the structure and integration of ecosystems will be discussed along with a focus on animal community ecology. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 320L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS **Note:** There may be field trips requiring scheduling outside of normal class time.

BIO 322 - Conservation Biology w/lab

Course Units: 1.0 Natural ecosystems have suffered from declining biodiversity and encroaching human development. In this course, you will examine how these alterations impact populations and ecosystems and will evaluate management strategies designed to facilitate long-term sustainability. Topics include genetics and population biology of rare species, threats to biodiversity and adaptive ecosystems management. **Prerequisite(s):** BIO 103 and BIO 104 or permission of instructor. **Corequisite(s):** BIO 322L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 324 - Plant Ecology w/lab

Course Units: 1.0 Examines the factors that affect the distribution and abundance of plants including the availability of water or nutrients, interactions with neighboring plants or animals, and the frequency of disturbances such as fires. Topics also include such environmental issues as climate change, exotic species invasions, the conservation of rare species, and the benefits of urban nature for human health. The weekly lab includes field excursions and quantitative data analysis. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 324L **CC:** SCLB, WAC-R, GDQR, GNPS **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 325 - Animal Behavior w/lab

Course Units: 1.0 An introduction to the study of animal behavior. The mechanisms and evolutionary processes underlying animal behavior under natural conditions will be examined. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 325L **CC:** SET **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 350 - Evolutionary Biology w/lab

Course Units: 1.0 Major concepts and mechanisms of biological evolution, including history of life, population genetics, molecular evolution, Darwinian medicine, and an emphasis on the processes of speciation. **Prerequisite(s):** BIO 103 and BIO 104 or permission of the instructor. **Corequisite(s):** BIO-350L **CC:** SET **Lecture/Lab Hours** One lab per week. **ISP:** ENS

- BIO 350T - Terrestrial Ecology of Australia
- BIO 352T - Marine Ecology of Australia

Additional Requirements

Of the ten courses, five must be numbered 300 or above; only one of the ten may be an independent study, research, or honors course. In addition, all biology majors are required to take CHM 101 (or CHM 110) AND at least four additional courses in math and the sciences. These should be chosen in consultation with your academic adviser(s), and may include courses in mathematics, statistics, chemistry, geosciences, physics, and computer science. Please note that acceptance to many graduate and professional schools and programs often requires two terms of calculus, two terms of physics, two terms of intro chemistry, and one or two terms of organic chemistry. We recommend that all majors start their intro chemistry (CHM 101/102 or CHM110) and calculus sequences (MTH 105 or MTH 110/112 or MTH 113) in their first year. For some students' interests and future plans, Intro to Computer Science (CSC 10x) or statistics may be an alternative to calculus. Students should consult with their advisor.

See relevant listings for requirements for a major in biochemistry, environmental engineering, environmental science, policy & engineering, biomedical engineering, or neuroscience.

Requirements for Honors in Biological Sciences:

Students eligible for departmental honors must fulfill the College-wide criteria and satisfactorily complete a thesis, usually based on the results of original biological research, which receives the approval of the department and appropriate College committee. It is customary, but not required, that research students enroll in three honors research courses, typically during the senior year. Interdepartmental majors must consult with their advisors in both disciplines during their junior year to receive approval for an interdepartmental thesis. The biology component of an interdepartmental thesis will normally incorporate at least one term of biological research.

Course Selection Guidelines

Placement: Students who received a score of 4 or 5 on the Advanced Placement exam may receive credit for BIO 050. The BIO 050 credit received from the Advanced Placement (AP) exam does not count as one of the biology courses toward the major or minor.

Courses Suitable for Non-Majors: BIO 050, BIO 055 , BIO 058, BIO 064, BIO 065 , BIO 077, BIO 088 and BIO 094 are designed for the general college community and may not be counted toward the biology major nor toward interdepartmental majors that include biology.

Senior Writing Requirement: Biology majors can satisfy the Senior Writing requirement (WS) by conducting research under the direction of a faculty member and writing a thesis (see BIO 497) or by taking one of the Senior Seminar courses in their senior year (see BIO 487, BIO 488, or BIO 489).

Biomedical Engineering

Department Chair: Associate Professor J. Currey. **Associate Chair:** Associate Professor T. Buma

Faculty: Professors L. Dosiek, C. Traver; Associate Professors S. Cotter, T. Buma, J. Currey, H. Hanson, S. Khetan; Assistant Professors S. Curley, M. Okwori, C. Pappu; Senior Lecturer J. Hedrick; Lecturer S. Leggett; Visiting Assistant Professors J. Chuah, A. Loya, M. Momota

Staff: L. Galeo (Administrative Assistant)

Biomedical Engineering is an interdisciplinary engineering major designed for students interested in exploring the interface between engineering and the life sciences. In Biomedical Engineering, students learn to apply engineering principles and analytical approaches to the study of biological systems and seek to understand the benefits and constraints of engineered materials, devices and control systems in life science and biomedical applications.

Students in the Biomedical Engineering major share common foundation and core courses in biology, biomechanics, biomaterials, electrical engineering, and choose among upper-level electives in biomechanics, biomaterials, and bioelectrical engineering. Courses in biomechanics and biomaterials focus on approaches to understanding the structural properties and dynamics of biological cells, tissues and systems, and of engineered devices with biological and biomedical applications. The bioelectrical engineering courses explore the interfaces among sensory physiology, neuroscience and electrical engineering and students focus on techniques to acquire, analyze and interpret neurological, biomedical and other biological signals and images. During senior year, students engage in a two term Biomedical Engineering capstone design course and may elect to conduct research under the guidance of a faculty member as part of a senior thesis.

The Biomedical Engineering program is accredited by the Engineering Accreditation Commission of ABET http://www.abet.org.

Educational objectives and program outcomes are listed on the program website.

Biomedical Engineering Minor

Requirements for the Minor:

A minimum of six courses taken outside the major department organized around the following:

Core Course Requirements:

BIO 104 - Cellular Foundations of Life

Course Units: 1.0 The cell is the basic unit of life. From single-celled to multicellular organisms, the cell must transform energy to survive, interact with its environment and reproduce itself. Different types of cells have different functions, and those specialized functions are exhibited in the signals they send and receive, the genes they express and ultimately the biochemical reactions they regulate. Thus, the arrangement and actions of biologically important molecules organize into functioning cellular systems and work together to carry out these important life processes. Required weekly laboratory sessions will introduce students to important tools and methods used by biologists and employ them to investigate biochemical and cellular processes and develop skills with scientific investigation including distinguishing theories and hypotheses, generating and testing hypotheses and analyzing data. **Corequisite(s):** BIO 104L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 103.

ESC 100 - Exploring Engineering

Course Units: 1.0 An introduction to engineering including fundamental topics core to engineering. The course includes a weekly design studio that emphasizes engineering design, teamwork, technical writing and ethics through several individual and team design projects. Not available to junior or senior engineering students. **Corequisite(s):** ESC 100L **CC:** SET, GETS **ISP:** STS **Note:** General engineering course common to more than one program.

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

or

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

or equivalent

PHY 110 - Physics for the Life Sciences 1

Course Units: 1.0 An introduction to classical mechanics, fluids, and thermodynamics with applications in the life sciences. Students must major in a life science or be admitted by permission of the instructor. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **Corequisite(s):** PHY 110L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

or

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

Upper-Level Course Requirements:

Engineering and Computer Science Majors:

Four courses from the following: 200 level or above biology courses, Biomedical Engineering courses, PHY 200 and PHY 210. Mechanical engineering students may not take BME 201, BME 202, or BME 311.

Biological Sciences Majors:

Four courses from the following: 200 level or above engineering (BME, MER, ECE) courses, CSC 243, PHY 200 or PHY 210. Third and fourth year students entering the Minor may opt to take an additional 200 level or above course instead of ESC 100.

Other Majors:

Four 200 level or above courses in biology, engineering, PHY 200 and PHY 210 with approval by the Program Directors.

Biomedical Engineering, B.S.

Requirements for the Major:

A total of 40 courses including the following:

Required courses in math, science, and general engineering:

Calculus through:

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

MTH 130 - Ordinary Differential Equations

Course Units: 1.0 Topics include first and second-order differential equations and first-order systems, including analytic, geometric, and numerical techniques, classification of first-order linear systems by eigenvalues, forcing and resonance, and the Laplace transform. Applications include but are not limited to population models, RC circuits, and

damped and undamped harmonic oscillators. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 **Note:** Not open to students who have passed MTH 234 . **CC:** GDQR

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS
(Note: Students considering the IMP 121/121 sequence should consult with their advisor.)

One from:

CHM 101 - Introductory Chemistry 1

Course Units: 1.0 This is an introductory course that focuses on atomic and molecular structure, chemical bonding, stoichiometry, aqueous chemical reactions, and the properties of gases, liquids, solids and solutions. **Prerequisite(s):** Not open to students who have scored 4 or 5 on the AP Chemistry Exam or who have completed CHM 110H . All students who wish to enroll in an introductory chemistry course must take a placement examination to determine the appropriate course. See Course Selection Guidelines for more information on placement. **Corequisite(s):** CHM 101L **CC:** SCLB **Lecture/Lab Hours** Three lab hours/week,6/10 weeks. **ISP:** ENS

CHM 110H - Honors Introductory Chemistry

Course Units: 1.0 A laboratory-intensive course that covers the main topics of CHM 101 and CHM 102 and is meant to replace those courses for students who have strong backgrounds in introductory chemistry. **Prerequisite(s):** Students who have scored 4 or 5 on the AP chemistry exam will be automatically placed into CHM 110H; see Course Selection guidelines for more information on placement. **CC:** SCLB, GNPS **ISP:** ENS **Note:** Students who have scored 4 or 5 on the AP chemistry exam or who successfully complete CHM 110H will also receive AP credit for CHM 101 .

One from:

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 104 - Robots Rule! Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a robotics theme. Introduces students to algorithms, basic data structures, and programming techniques. Students will build and program robots, exploring mobility, navigation, sensing, and inter-robot communication. Additional class topics include: history of robotics, social and ethical issues, emotionally intelligent behavior and other current topics in robotics. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 105 - Game Development: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a computer games theme. Introduces students to algorithms, basic data structures, and programming techniques. Computer game development is used as an example application area and students implement their own games throughout the course. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area, focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 108 - Scientific Computing: Introduction to Computer Science

Course Units: 1.0 Computers are used as tools in analyzing and solving scientific problems as well as being embedded in many applications and experimental equipment used by today's scientists. This course is designed to introduce students to computer programming and problem solving through the use of Python. Python is a language commonly used by the scientific community, and we will focus on using it to address scientific problems, using extensions that facilitate scientific computing. CC: QMR, SET Note: A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

ESC 100 - Exploring Engineering

Course Units: 1.0 An introduction to engineering including fundamental topics core to engineering. The course includes a weekly design studio that emphasizes engineering design, teamwork, technical writing and ethics through several individual and team design projects. Not available to junior or senior engineering students. **Corequisite(s):** ESC 100L **CC:** SET, GETS **ISP:** STS **Note:** General engineering course common to more than one program.

Required foundation and core courses for Biomedical Engineering:

BIO 104 - Cellular Foundations of Life

Course Units: 1.0 The cell is the basic unit of life. From single-celled to multicellular organisms, the cell must transform energy to survive, interact with its environment and reproduce itself. Different types of cells have different functions, and those specialized functions are exhibited in the signals they send and receive, the genes they express and ultimately the biochemical reactions they regulate. Thus, the arrangement and actions of biologically important molecules organize into functioning cellular systems and work together to carry out these important life processes. Required weekly laboratory sessions will introduce students to important tools and methods used by biologists and employ them to investigate biochemical and cellular processes and develop skills with scientific investigation including distinguishing theories and hypotheses, generating and testing hypotheses and analyzing data. **Corequisite(s):** BIO 104L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 103.

BIO 205 - Topics in Molecular Biology

Course Units: 1.0 In this sophomore level course, students will learn the key concepts of the molecular biology of the cell as well as how to integrate the principles of cell structure and function with the underlying molecular mechanism(s). Discussions will focus on gene structure, mechanisms of replication, transcription and translation, mutation and DNA repair, gene regulations, and genomics. Each of these concepts will be discussed in the context of a unifying theme selected by the instructor. Possible examples of these themes include viruses, epigenetics, human diseases, biotechnology and artificial organisms, cell fate determination and differentiation. **Prerequisite(s):** BIO 103 and BIO 104 . **CC:** SET **Note:** May not be taken simultaneously with BIO 206.

BIO 206 - Topics in Physiology

Course Units: 1.0 Cells are organized into tissues, organs, and organ systems, which carry out functions of energy storage and transformation, transport, signaling, and the regulation of internal conditions. These functions arise from activities and interactions that span different levels of the organizational hierarchy. This sophomore level course will focus on how physiological processes arise and are controlled and why these mechanisms have evolved. This course will also demonstrate how physiology can help bridge understandings between molecular/cellular biology and ecology/evolutionary biology. **Prerequisite(s):** BIO 103 and BIO 104 . **CC:** SET **Note:** May not be taken simultaneously with BIO 205.

BME 101 - Graphics and Image Processing for Biomedical Systems

Course Units: 1.0 Students will learn how to create objects, assemblies, and engineering drawings using SolidWorks, a solid modeling software. Students will also be introduced to the fundamentals of image acquisition and processing in biomedical systems and the use of block diagrams to construct more complex processing systems. **CC:** SET

BME 201 - Biomechanics 1

Course Units: 1.0 A basic biomechanics course concerned with two- and three-dimensional force systems, equilibrium and distributed forces. These topics will be studied in the context of the musculoskeletal system. **Prerequisite(s):** PHY 120

BME 202 - Biomechanics 2

Course Units: 1.0 Kinematics and kinetics of particles and rigid bodies in planar motion with applications to human motion analysis. The course includes Newtonian and energy approaches to problem solutions. **Prerequisite(s):** BME 201 **Corequisite(s):** BME 202L

BME 210 - Statistical Methods in Biomedical Engineering

Course Units: 1.0 This course will explore basic principles of probability and statistics, with emphasis on applications of statistical methods in Biomedical Engineering. Topics will include descriptive statistics, probability theory, discrete and continuous random variables, hypothesis testing and analysis of variance. **Prerequisite(s):** MTH 112 or MTH 113

BME 225 - Electric Circuits

Course Units: 1.0 Basic electrical circuit concepts and devices such as Ohm's law, Kirchhoff's laws, Thevenin and Norton equivalents, operational amplifiers, analysis methods, capacitors, inductors, ideal transformers, phasors, AC steady state analysis, complex power, frequency response and filters. **Cross-Listed:** ECE 225 **Prerequisite(s):** MTH 112 or higher. **Corequisite(s):** BME 225L **Lecture/Lab Hours** One lab per week.

BME 240 - Circuits and Systems

Course Units: 1.0 Transient analysis of RLC circuits; modeling of circuits using differential equations; system models and properties; Laplace transforms applied to circuit and system design and analysis; system functions; complex frequency; poles and zeros; stability; frequency response; filter design. **Cross-Listed:** ECE 240 **Prerequisite(s):** BME 225 or ECE 225 **Corequisite(s):** BME-240L **CC:** WAC **Lecture/Lab Hours** One lab per week.

BME 241 - Discrete Systems

Course Units: 1.0 Discrete signals and systems; classification and properties of systems; difference equations; Z-transform; Fourier series, Fourier transforms, the DFT and FFT; filters and filter design; A/D and D/A converters; applications to audio signal processing. **Cross-Listed:** ECE 241 **Prerequisite(s):** BME 240 **Corequisite(s):** BME 241L **CC:** WAC **Lecture/Lab Hours** One lab per week.

BME 311 - Advanced Biomechanics

Course Units: 1.0 Advanced biomechanics topics in stress analysis, deflection and stiffness, failure analysis, fracture mechanics, fatigue. **Prerequisite(s):** BME 201 **Corequisite(s):** BME 311L **Lecture/Lab Hours** One lab per week.

BME 331 - Cell-Tissue-Material Interaction

Course Units: 1.0 This course studies interactions between living cells, tissues and implant biomaterials, with a focus on molecular and cellular level phenomena in the initiation and generation of tissue and systemic responses. **Cross-Listed:** BIO 231 **Prerequisite(s):** BIO 104

BME 386 - Biomedical Instrumentation

Course Units: 1.0 Introduction to the theory and application of instruments in medicine. Measurements of the major systems in the body are covered. A weekly laboratory provides an opportunity to perform measurements and use biomedical instruments. **Cross-Listed:** ECE 386 **Prerequisite(s):** BME 240 , ECE 240 **Corequisite(s):** BME 386L **Lecture/Lab Hours** One lab per week.

Biomedical Engineering electives

Four courses from BME, ECE or other engineering and computer science courses subject to approval. All must be at the 200-level or higher, with at least three at the 300 level or higher. At least one course must have a BME designation.

Biology Elective: One 300-Level BIO course.

Capstone design:

BME 495 - Biomedical Engineering Capstone Design 1

Course Units: 1.0 A capstone design experience in which students work in teams on biomedical Engineering design problems. Each team will use design methodologies and techniques to produce a complete and detailed design for a designated biomedical Engineering client. **Prerequisite(s):** ECE 240 **Corequisite(s):** BME 311 **CC:** WAC, WAC-R

BME 496 - Biomedical Engineering Capstone Design 2

Course Units: 1.0 A continuation of the capstone design experience in which students work in teams where they apply design methodologies and techniques to produce a complete and detailed design for a designated biomedical engineering client. **Prerequisite(s):** BME 495 **CC:** WS

Requirements for Honors

The criteria for graduating with honors in Biomedical Engineering are: (1) a cumulative index of at least 3.3; (2) a cumulative index in major courses of at least 3.3, with an A or A- in at least three of those courses; (3) a cumulative index of at least 3.5 in the two courses of capstone design; (4) final six terms of courses at Union. The major courses are listed above under "Foundation and core courses for Biomedical Engineering," "Biomedical Engineering electives" and "Capstone design".

Course Selection Guidelines

Placement. Students will receive credit for AP or IB courses following the guidelines of the appropriate supporting department.

Course Sequence. Students should consult with their academic advisor and the following yearly requirements when scheduling courses. Some 300 level courses are not offered every year, and some of these courses will be taken outside of the year indicated.

Senior Projects. Students interested in working with a faculty member on a two-term Senior Project should meet with potential faculty advisors during their junior year to identify a project; students should notify one of the Program Directors when this process is complete. The first course (BME 497) will count as a Free Elective and BME 498 will count as a BME Elective.

Sample schedule starting with MTH 110:
Students with different math and science backgrounds will have slightly different course sequences.

First Year:

FYI 100 - First-Year Inquiry

Course Units: 1.0 First-Year Inquiry engages students in the exploration of ideas and diverse perspectives through critical reading, thinking, and writing.

ESC 100 - Exploring Engineering

Course Units: 1.0 An introduction to engineering including fundamental topics core to engineering. The course includes a weekly design studio that emphasizes engineering design, teamwork, technical writing and ethics through several individual and team design projects. Not available to junior or senior engineering students. **Corequisite(s):** ESC 100L **CC:** SET, GETS **ISP:** STS **Note:** General engineering course common to more than one program.

CSC 10X - Introduction to Computer Science

MTH 110 - Calculus 1: Differential Calculus

Course Units: 1.0 Differential calculus of functions of a single variable. Limits, continuity, differentiation, computational aspects of Maclaurin and Taylor polynomials and series, and applications. **Note:** Not intended for students who have passed MTH 059 ,MTH 105 , MTH 113 , MTH 110P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

BME 101 - Graphics and Image Processing for Biomedical Systems

Course Units: 1.0 Students will learn how to create objects, assemblies, and engineering drawings using SolidWorks, a solid modeling software. Students will also be introduced to the fundamentals of image acquisition and processing in biomedical systems and the use of block diagrams to construct more complex processing systems. **CC:** SET

- Elective ii

Second Year:

BIO 104 - Cellular Foundations of Life

Course Units: 1.0 The cell is the basic unit of life. From single-celled to multicellular organisms, the cell must transform energy to survive, interact with its environment and reproduce itself. Different types of cells have different functions, and those specialized functions are exhibited in the signals they send and receive, the genes they express and ultimately the biochemical reactions they regulate. Thus, the arrangement and actions of biologically important molecules organize into functioning cellular systems and work together to carry out these important life processes. Required weekly laboratory sessions will introduce students to important tools and methods used by biologists and employ them to investigate biochemical and cellular processes and develop skills with scientific investigation including distinguishing theories and hypotheses, generating and testing hypotheses and analyzing data. **Corequisite(s):** BIO 104L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 103.

CHM 101 - Introductory Chemistry 1

Course Units: 1.0 This is an introductory course that focuses on atomic and molecular structure, chemical bonding, stoichiometry, aqueous chemical reactions, and the properties of gases, liquids, solids and solutions. **Prerequisite(s):** Not open to students who have scored 4 or 5 on the AP Chemistry Exam or who have completed CHM 110H . All students who wish to enroll in an introductory chemistry course must take a placement examination to determine the appropriate course. See Course Selection Guidelines for more information on placement. **Corequisite(s):** CHM 101L **CC:** SCLB **Lecture/Lab Hours** Three lab hours/week,6/10 weeks. **ISP:** ENS

MTH 130 - Ordinary Differential Equations

Course Units: 1.0 Topics include first and second-order differential equations and first-order systems, including analytic, geometric, and numerical techniques, classification of first-order linear systems by eigenvalues, forcing and resonance, and the Laplace transform. Applications include but are not limited to population models, RC circuits, and damped and undamped harmonic oscillators. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 **Note:** Not open to students who have passed MTH 234 . **CC:** GDQR

BME 201 - Biomechanics 1

Course Units: 1.0 A basic biomechanics course concerned with two- and three-dimensional force systems, equilibrium and distributed forces. These topics will be studied in the context of the musculoskeletal system. **Prerequisite(s):** PHY 120

BME 202 - Biomechanics 2

Course Units: 1.0 Kinematics and kinetics of particles and rigid bodies in planar motion with applications to human motion analysis. The course includes Newtonian and energy approaches to problem solutions. **Prerequisite(s):** BME 201 **Corequisite(s):** BME 202L

BME 210 - Statistical Methods in Biomedical Engineering

Course Units: 1.0 This course will explore basic principles of probability and statistics, with emphasis on applications of statistical methods in Biomedical Engineering. Topics will include descriptive statistics, probability theory, discrete and continuous random variables, hypothesis testing and analysis of variance. **Prerequisite(s):** MTH 112 or MTH 113

BME 225 - Electric Circuits

Course Units: 1.0 Basic electrical circuit concepts and devices such as Ohm's law, Kirchhoff's laws, Thevenin and Norton equivalents, operational amplifiers, analysis methods, capacitors, inductors, ideal transformers, phasors, AC steady state analysis, complex power, frequency response and filters. **Cross-Listed:** ECE 225 **Prerequisite(s):** MTH 112 or higher. **Corequisite(s):** BME 225L **Lecture/Lab Hours** One lab per week.

BME 240 - Circuits and Systems

Course Units: 1.0 Transient analysis of RLC circuits; modeling of circuits using differential equations; system models and properties; Laplace transforms applied to circuit and system design and analysis; system functions; complex frequency; poles and zeros; stability; frequency response; filter design. **Cross-Listed:** ECE 240 **Prerequisite(s):** BME 225 or ECE 225 **Corequisite(s):** BME-240L **CC:** WAC **Lecture/Lab Hours** One lab per week.

- Elective ii

Third Year:

BIO 205 - Topics in Molecular Biology

Course Units: 1.0 In this sophomore level course, students will learn the key concepts of the molecular biology of the cell as well as how to integrate the principles of cell structure and function with the underlying molecular mechanism(s). Discussions will focus on gene structure, mechanisms of replication, transcription and translation, mutation and DNA repair, gene regulations, and genomics. Each of these concepts will be discussed in the context of a unifying theme selected by the instructor. Possible examples of these themes include viruses, epigenetics, human diseases, biotechnology and artificial organisms, cell fate determination and differentiation. **Prerequisite(s):** BIO 103 and BIO 104 . **CC:** SET **Note:** May not be taken simultaneously with BIO 206.

BIO 206 - Topics in Physiology

Course Units: 1.0 Cells are organized into tissues, organs, and organ systems, which carry out functions of energy storage and transformation, transport, signaling, and the regulation of internal conditions. These functions arise from activities and interactions that span different levels of the organizational hierarchy. This sophomore level course will focus on how physiological processes arise and are controlled and why these mechanisms have evolved. This course will also demonstrate how physiology can help bridge understandings between molecular/cellular biology and ecology/evolutionary biology. **Prerequisite(s):** BIO 103 and BIO 104 . **CC:** SET **Note:** May not be taken simultaneously with BIO 205.

BME 241 - Discrete Systems

Course Units: 1.0 Discrete signals and systems; classification and properties of systems; difference equations; Z-transform; Fourier series, Fourier transforms, the DFT and FFT; filters and filter design; A/D and D/A converters; applications to audio signal processing. **Cross-Listed:** ECE 241 **Prerequisite(s):** BME 240 **Corequisite(s):** BME 241L **CC:** WAC **Lecture/Lab Hours** One lab per week.

BME 331 - Cell-Tissue-Material Interaction

Course Units: 1.0 This course studies interactions between living cells, tissues and implant biomaterials, with a focus on molecular and cellular level phenomena in the initiation and generation of tissue and systemic responses. **Cross-Listed:** BIO 231 **Prerequisite(s):** BIO 104

BME 386 - Biomedical Instrumentation

Course Units: 1.0 Introduction to the theory and application of instruments in medicine. Measurements of the major systems in the body are covered. A weekly laboratory provides an opportunity to perform measurements and use biomedical instruments. **Cross-Listed:** ECE 386 **Prerequisite(s):** BME 240 , ECE 240 **Corequisite(s):** BME 386L **Lecture/Lab Hours** One lab per week.

- BME Elective iv
- BME Elective iv
- Elective ii
- Elective ii
- Elective ii

Fourth Year:

- BIO 3XX

BME 311 - Advanced Biomechanics

Course Units: 1.0 Advanced biomechanics topics in stress analysis, deflection and stiffness, failure analysis, fracture mechanics, fatigue. **Prerequisite(s):** BME 201 **Corequisite(s):** BME 311L **Lecture/Lab Hours** One lab per week.

BME 495 - Biomedical Engineering Capstone Design 1

Course Units: 1.0 A capstone design experience in which students work in teams on biomedical Engineering design problems. Each team will use design methodologies and techniques to produce a complete and detailed design for a designated biomedical Engineering client. **Prerequisite(s):** ECE 240 **Corequisite(s):** BME 311 **CC:** WAC, WAC-R

BME 496 - Biomedical Engineering Capstone Design 2

Course Units: 1.0 A continuation of the capstone design experience in which students work in teams where they apply design methodologies and techniques to produce a complete and detailed design for a designated biomedical engineering client. **Prerequisite(s):** BME 495 **CC:** WS

- BME Elective iv
- BME Elective iv
- Elective ii
- Elective ii
- Elective ii
- Elective ii

Note(s):

i Alternative mathematics and physics sequences are possible depending on the preparation of the student.

ii The nine Electives are typically distributed among five Common Curriculum (CC) courses and four "free electives". Students planning to attend medical school should take PSY 100 as their "Social Sciences" CC course and BIO 103, CHM 102, CHM 231, and CHM 232 as free electives. Students interested in the health professions (e.g. medical school, physician assistant) should contact the Health Professions Office for specialized advising and other services.

iii The Linguistic and Cultural Competency (LCC) component of the Common Curriculum is recommended to be satisfied in the third year through a Term Abroad (typically during Fall or Spring term), or a mini term.

iv The BME Elective courses include any four courses from BME, ECE or other engineering and computer science courses subject to approval. All must be >200-level with at least three at the >300 level. At least one must have a BME prefix.

Chemistry

Chair: Associate Professor L. MacManus-Spencer
Faculty: Professors J. Adrian, M. Carroll, K. Fox, J. Kehlbeck, L. Tyler; Associate Professor E. Robertson; Assistant Professors T. Barnum,C. Connelly, E. Robertson, C Whitehead; Lecturers J. Flanagan-Natoli, B. Schabes; Visiting Assistant Professors L. Pedzisa, G. Riegel, O. Soliman

The Chemistry Department is certified by the American Chemical Society. Bachelors' degrees with a major in chemistry may be either certified by the American Chemical Society or not, according to requirements listed below. The certified degree is not necessary for the furtherance of any professional goals. Union College strongly supports terms abroad but careful planning is required. For sample four-year schedules, please see the Chemistry Department website.

Chemistry (ID), B.S.

Requirements for Interdepartmental Majors:

Students seeking an interdepartmental major must submit a proposal to the Chair of the Chemistry Department outlining their proposed program of study no later than the second term of their junior year. This program must be written in consultation with advisors from both departments to form a cohesive and integrated major. A specific plan including all appropriate courses in mathematics and physical sciences or other required prerequisites, as well a plan to fulfill the senior writing requirement should be included in the proposal. Approval of this plan by both departments is required prior to declaring an interdepartmental major. Students who wish to have their interdepartmental major listed as Chemistry/Other are required to take at least seven chemistry courses at the 200-level or higher. Students who wish to have their interdepartmental major listed as Other/Chemistry are required to take at least six chemistry courses at the 200-level or higher.

Students in the Leadership in Medicine program whose science emphasis is in chemistry should take the following six courses:

CHM 110H - Honors Introductory Chemistry

Course Units: 1.0 A laboratory-intensive course that covers the main topics of CHM 101 and CHM 102 and is meant to replace those courses for students who have strong backgrounds in introductory chemistry. **Prerequisite(s):** Students who have scored 4 or 5 on the AP chemistry exam will be automatically placed into CHM 110H; see Course Selection guidelines for more information on placement. **CC:** SCLB, GNPS **ISP:** ENS **Note:** Students who have scored 4 or 5 on the AP chemistry exam or who successfully complete CHM 110H will also receive AP credit for CHM 101 .

CHM 231 - Organic Chemistry 1

Course Units: 1.0 A mechanistic approach to the chemistry of carbon compounds organized around the reactions of functional groups. We cover alkanes, cycloalkanes, alcohols, alkyl halides (nucleophilic substitution and elimination),

alkenes (addition and elimination), alkynes, spectroscopy (IR and NMR) and computer molecular modeling. **Prerequisite(s):** CHM 102 or CHM 110H **Corequisite(s):** CHM 231L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

CHM 232 - Organic Chemistry 2

Course Units: 1.0 A continuation of CHM 231 including an emphasis on synthesis, and the chemistry of conjugated and aromatic compounds, carbonyl compounds, and an introduction to important classes of biomolecules. **Prerequisite(s):** CHM 231 **Corequisite(s):** CHM 232L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week.

CHM 240 - Analytical Chemistry

Course Units: 1.0 A course that focuses on the quantitative analysis of samples. Classroom and laboratory emphasis on statistical treatment of data, classical and instrumental methods of chemical analysis, and chemical equilibrium. **Prerequisite(s):** CHM 231 **Corequisite(s):** CHM 240L **CC:** SCLB, WAC-R **Lecture/Lab Hours** Six lab hours each week. **ISP:** ENS

CHM 382 - Biochemistry: Structure and Catalysis

Course Units: 1.0 Structure and function of proteins/enzymes including purification, mechanism, kinetics, regulation, metabolism and a detailed analysis of several classic protein systems. **Cross-Listed:** BCH 382 and BIO 382 **Prerequisite(s):** CHM 232 Not open to students who have completed CHM 335 , BIO 335 or BCH 335 **Corequisite(s):** CHM 382L **CC:** SCLB, WAC, WAC-R **Lecture/Lab Hours** Four lab hours each week.

Take one additional 200-level CHM course with lab

OR

Take a 300-level CHM course (CHM 335 excluded)

NOTE:

* Students in the Leadership in Medicine Program normally taken CHM 110H; students with less chemistry preparation may substitute the two-course CHM 101/CHM 102 sequence.

Requirements for Honors in Chemistry:

Candidates for honors in chemistry must: 1) have a cumulative index of at least 3.5; 2) have an index of at least 3.5 in the courses of their major, including courses associated with the thesis but excluding cognates; 3) have at least three A or A- grades in major courses (not including any given in connection with the writing of the thesis); 4) submit evidence of independent work in chemistry of substance and distinction in the form of a thesis that shall have been awarded a grade of at least A-. Candidates must fulfill the College-wide criteria for honors and must be formally nominated by the Chemistry Department.

Course Selection Guidelines

Placement: Any student interested in taking introductory chemistry is required to take a placement examination to determine the appropriate course. Exception: a student wishing to take introductory chemistry who has scored 4 or 5 on the AP chemistry exam will be automatically placed into CHM 110H and cannot take CHM 101. Students who have scored 4 or 5 on the AP chemistry exam or who successfully complete CHM 110H will also receive AP credit for CHM 101. CHM 110H is offered only in the fall term. [Note: occasionally a student who places out of CHM 101 may find it

more appropriate to take CHM 102 instead of CHM 110H. This decision must be made in consultation with the Chair of the Chemistry Department.]

Complex Questions: Global Challenges & Social Justice Courses (for students entering Union in Fall 2022 and beyond): CHM 102 and CHM 110H address global challenges from a natural and physical science perspective (GNPS). CHM 224 addresses global challenges from an engineering, technology and society perspective (GETS).

Common Curriculum Courses (for students entering Union prior to Fall 2022): CHM 060 and CHM 080 and CHM 090 are designed for the general college community. They do not count toward the chemistry major nor for interdepartmental majors that include chemistry. CHM 101, CHM 102, and CHM 110H are also appropriate courses for students wishing to complete their Common Curriculum requirements.

Prerequisites: There is a strict prerequisite structure for the chemistry curriculum, so it is very important to review individual course descriptions in planning when to take the various courses. Every 200-level course has at least one 100-level chemistry course prerequisite, and some have other 200-level chemistry courses and/or cognate courses as prerequisites. Every 300-level course has at least one 200-level chemistry course prerequisite, and some have other 300-level chemistry courses and/or cognate courses as prerequisites.

Repeating Chemistry Courses: Chemistry courses may be repeated according to the college policy, if space permits, with the following exception: a student cannot repeat a chemistry course that is a prerequisite for another chemistry or biochemistry course that the student has successfully completed. Students who want to repeat a chemistry course should consult with the Chair of the Chemistry Department.

Chemistry Minor

Requirements for the Minor:

CHM 101 and CHM 102 or CHM 110H, CHM 231 and any three other chemistry (CHM) courses.

Chemistry, A.C.S., B.S.

Requirements for the A.C.S. Chemistry Major:

There are four different tracks that build on a common core of courses.

Each track includes

CHM 110H - Honors Introductory Chemistry

Course Units: 1.0 A laboratory-intensive course that covers the main topics of CHM 101 and CHM 102 and is meant to replace those courses for students who have strong backgrounds in introductory chemistry. **Prerequisite(s):** Students who have scored 4 or 5 on the AP chemistry exam will be automatically placed into CHM 110H; see Course Selection guidelines for more information on placement. **CC:** SCLB, GNPS **ISP:** ENS **Note:** Students who have scored 4 or 5 on the AP chemistry exam or who successfully complete CHM 110H will also receive AP credit for CHM 101 .

CHM 231 - Organic Chemistry 1

Course Units: 1.0 A mechanistic approach to the chemistry of carbon compounds organized around the reactions of functional groups. We cover alkanes, cycloalkanes, alcohols, alkyl halides (nucleophilic substitution and elimination),

alkenes (addition and elimination), alkynes, spectroscopy (IR and NMR) and computer molecular modeling. **Prerequisite(s):** CHM 102 or CHM 110H **Corequisite(s):** CHM 231L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

CHM 232 - Organic Chemistry 2

Course Units: 1.0 A continuation of CHM 231 including an emphasis on synthesis, and the chemistry of conjugated and aromatic compounds, carbonyl compounds, and an introduction to important classes of biomolecules. **Prerequisite(s):** CHM 231 **Corequisite(s):** CHM 232L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week.

CHM 240 - Analytical Chemistry

Course Units: 1.0 A course that focuses on the quantitative analysis of samples. Classroom and laboratory emphasis on statistical treatment of data, classical and instrumental methods of chemical analysis, and chemical equilibrium. **Prerequisite(s):** CHM 231 **Corequisite(s):** CHM 240L **CC:** SCLB, WAC-R **Lecture/Lab Hours** Six lab hours each week. **ISP:** ENS

CHM 260 - Inorganic Chemistry

Course Units: 1.0 Foundations of inorganic chemistry focuses on bonding, acid/base properties, structure and symmetry, and reactivity of transition metal compounds. The laboratory portion of the course is centered on the synthesis and characterization of inorganic compounds and investigation of their electronic properties. **Prerequisite(s):** CHM 231 or permission of the instructor. **Corequisite(s):** CHM 260L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week.

CHM 351 - Kinetics and Thermodynamics

Course Units: 1.0 Properties of gases; fundamentals of statistical mechanics; fundamentals of thermodynamics including heats of reactions, phase transitions, and chemical equilibria; chemical kinetics. **Prerequisite(s):** CHM 240 , PHY 110 or PHY 120 and MTH 115 or MTH 115H **Corequisite(s):** CHM 351L **CC:** SCLB, WAC **Lecture/Lab Hours** Four lab hours each week.

CHM 382 - Biochemistry: Structure and Catalysis

Course Units: 1.0 Structure and function of proteins/enzymes including purification, mechanism, kinetics, regulation, metabolism and a detailed analysis of several classic protein systems. **Cross-Listed:** BCH 382 and BIO 382 **Prerequisite(s):** CHM 232 Not open to students who have completed CHM 335 , BIO 335 or BCH 335 **Corequisite(s):** CHM 382L **CC:** SCLB, WAC, WAC-R **Lecture/Lab Hours** Four lab hours each week.

Note:

* Students not placed into CHM 110H may substitute the two-course CHM 101/CHM 102 sequence.

Four in-depth courses (as outlined below) in chemistry and related areas**

Three terms of thesis research in chemistry

CHM 491 - Chemical Research 1

Course Units: 1.0 Chemical research under the direction of a member of the faculty. Thesis required. Expectations include a minimum of twelve hours per week of lab work, in addition to other requirements to be determined by individual research advisors. **Prerequisite(s):** CHM 232 , CHM 240 (CHM 340 and CHM 351 are recommended), third-term junior standing, and/or permission of the Chemistry Department Chair. **CC:** WS

CHM 492 - Chemical Research 2

Course Units: 1.0 Chemical research under the direction of a member of the faculty. Thesis required. Expectations include a minimum of twelve hours per week of lab work, in addition to other requirements to be determined by individual research advisors. **Prerequisite(s):** CHM 232 , CHM 240 (CHM 340 and CHM 351 are recommended), third-term junior standing, and/or permission of the Chemistry Department Chair. **CC:** WS

CHM 493 - Chemical Research 3

Course Units: 1.0 Chemical research under the direction of a member of the faculty. Thesis required. Expectations include a minimum of twelve hours per week of lab work, in addition to other requirements to be determined by individual research advisors. **Prerequisite(s):** CHM 232 , CHM 240 (CHM 340 and CHM 351 are recommended), third-term junior standing, and/or permission of the Chemistry Department Chair. **CC:** WS

Additional Requirements

Mathematics through:

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

Two terms of introductory physics

PHY 110 - Physics for the Life Sciences 1

Course Units: 1.0 An introduction to classical mechanics, fluids, and thermodynamics with applications in the life sciences. Students must major in a life science or be admitted by permission of the instructor. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **Corequisite(s):** PHY 110L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

and

PHY 111 - Physics for the Life Sciences 2

Course Units: 1.0 An introduction to electromagnetism, optics, and the structure of matter with applications in the life sciences. **Prerequisite(s):** PHY 110 , PHY 120 ,MTH 102 , MTH 112 ,or MTH 113 **Corequisite(s):** PHY 111L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

or

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

and

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

In-depth course requirements for each track follow:

Chemistry Track:

Three required in-depth courses

CHM 340 - Chemical Instrumentation

Course Units: 1.0 Theory and practice of modern methods of analysis with emphasis on spectroscopic, chromatographic, electrochemical, and surface science techniques, as well as electronic measurements. **Prerequisite(s):** CHM 231 , CHM 240 , and one course in physics or permission of the instructor. **Corequisite(s):** CHM 340L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

CHM 352 - Quantum Chemistry

Course Units: 1.0 Fundamentals of quantum mechanics and its application to chemical bonding and spectroscopy. **Prerequisite(s):** CHM 240 , and MTH 115 or MTH 115H ; PHY 111 or PHY 121 or IMP 121 **Corequisite(s):** CHM 352L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week.

CHM 360 - Advanced Inorganic Chemistry

Course Units: 1.0 This course focuses on advanced topics in inorganic chemistry, including: Spectroscopic methods, homogeneous and heterogeneous catalysis, organometallics, materials chemistry, inorganic nanomaterials, and bioinorganic chemistry. **Prerequisite(s):** CHM 260 and CHM 351 or permission of the instructor. **CC:** SET

One elective course chosen from

CHM 330 - Medicinal Chemistry

Course Units: 1.0 This course focuses on medicinal chemistry and the underlying principles of organic chemistry. Topics to be covered include drug discovery and approval, lead modification, drug-receptor interactions, structure-activity relationships (SAR), drug delivery, pro-drugs and biomimetics. Physicochemical properties and synthetic approaches to drug families will be emphasized. **Prerequisite(s):** CHM 232 **CC:** SET

CHM 332 - Synthetic Methods

Course Units: 1.0 This course focuses on developing the common laboratory techniques used in modern synthetic organic chemistry and the underlying principles of organic chemistry covered. Topics to be covered will be in the form

of three synthetic projects. **Prerequisite(s):** CHM 232 **CC:** SCLB **Lecture/Lab Hours** Six lab hours each week plus additional instrumentation time outside of lab.

CHM 354 - Chemical Applications of Group Theory

Course Units: 1.0 A course on the role of molecular symmetry in chemistry. Topics include symmetry point groups; bonding in organic, inorganic, and organometallic compounds; and vibrational spectroscopy. **Prerequisite(s):** CHM 232 and CHM 352 , MTH 115 , and PHY 111 or PHY 121 **Prereq/Corequisite(s):** CHM 352 may be taken concurrently. **CC:** SET

BIO 380 - Biochemistry: Nucleic Acids, Carbohydrates, and Lipids w/lab

Course Units: 1.0 An in-depth investigation into some of the macromolecules that are essential to life's processes. The course focuses on non-protein molecules and their unique chemical properties. **Cross-Listed:** BCH 380 **Prerequisite(s):** BIO 205 and CHM 232 , or permission of the instructor. CHM 232 , or permission of the instructor. **Corequisite(s):** BIO 380L **Prereq/Corequisite(s):** Not open to students who have completed BIO 335 . **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week.

Also recommended

Additional courses in chemistry, physics, computer science, and/or engineering.

Chemical Biology Track:

Two required in-depth courses

BIO 380 - Biochemistry: Nucleic Acids, Carbohydrates, and Lipids w/lab

Course Units: 1.0 An in-depth investigation into some of the macromolecules that are essential to life's processes. The course focuses on non-protein molecules and their unique chemical properties. **Cross-Listed:** BCH 380 **Prerequisite(s):** BIO 205 and CHM 232 , or permission of the instructor. CHM 232 , or permission of the instructor. **Corequisite(s):** BIO 380L **Prereq/Corequisite(s):** Not open to students who have completed BIO 335 . **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week.

CHM 340 - Chemical Instrumentation

Course Units: 1.0 Theory and practice of modern methods of analysis with emphasis on spectroscopic, chromatographic, electrochemical, and surface science techniques, as well as electronic measurements. **Prerequisite(s):** CHM 231 , CHM 240 , and one course in physics or permission of the instructor. **Corequisite(s):** CHM 340L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

Two elective courses chosen from

CHM 330 - Medicinal Chemistry

Course Units: 1.0 This course focuses on medicinal chemistry and the underlying principles of organic chemistry. Topics to be covered include drug discovery and approval, lead modification, drug-receptor interactions, structure-activity relationships (SAR), drug delivery, pro-drugs and biomimetics. Physicochemical properties and synthetic approaches to drug families will be emphasized. **Prerequisite(s):** CHM 232 **CC:** SET

CHM 332 - Synthetic Methods

Course Units: 1.0 This course focuses on developing the common laboratory techniques used in modern synthetic organic chemistry and the underlying principles of organic chemistry covered. Topics to be covered will be in the form of three synthetic projects. **Prerequisite(s):** CHM 232 **CC:** SCLB **Lecture/Lab Hours** Six lab hours each week plus additional instrumentation time outside of lab.

CHM 352 - Quantum Chemistry

Course Units: 1.0 Fundamentals of quantum mechanics and its application to chemical bonding and spectroscopy. **Prerequisite(s):** CHM 240 , and MTH 115 or MTH 115H ; PHY 111 or PHY 121 or IMP 121 **Corequisite(s):** CHM 352L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week.

BIO 378 - Cancer Cell Biology

Course Units: 1.0 This course investigates the molecular basis of cancer by comparing normal cells to cancer cells with respect to growth control mechanisms, signal transduction, and cell-cell and cell-environment interactions. A large percent of the content of the course comes from recent research papers which students read and present to the class. Laboratory exercises include primary tissue culture, immunofluorescence microscopy, immunodetection, and a final research project. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 378L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 384 - Genetics and Molecular Biology w/lab

Course Units: 1.0 The use of both classical genetics and molecular biology as experimental tools is currently being applied to an extremely diverse array of questions in biology. This course will expose the student to many of the commonly-used techniques in the "toolkit" of the geneticist/molecular biologist. Emphasis will be on recent advances in our understanding of topics of current interest such as development, cellular response to environmental stimuli, tumor formation, human genetic disease, circadian rhythms, and mammalian sex determination, amongst others. Laboratory will emphasize the use of modern molecular biological techniques and will involve group projects of the students' choice. **Prerequisite(s):** BIO 205 and CHM 102 or CHM 110H **Corequisite(s):** BIO 384L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

Also recommended

Additional courses in biology, chemistry, physics, computer science, and/or engineering.

Environmental Chemistry Track:

Two required courses

CHM 245 - Environmental Chemistry

Course Units: 1.0 A course focused on the role of chemical principles such as chemical equilibrium, kinetics and chemical structure in understanding natural environmental cycles and the impacts of human activity on those cycles. Topics covered include: aquatic chemistry and water pollution, atmospheric chemistry and air pollution, energy and climate change, and toxic organic chemicals in the environment. **Prerequisite(s):** CHM 231 **CC:** SET **ISP:** ENS

CHM 340 - Chemical Instrumentation

Course Units: 1.0 Theory and practice of modern methods of analysis with emphasis on spectroscopic, chromatographic, electrochemical, and surface science techniques, as well as electronic measurements. **Prerequisite(s):** CHM 231 , CHM 240 , and one course in physics or permission of the instructor. **Corequisite(s):** CHM 340L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

Two elective in-depth courses chosen from

BIO 320 - Ecology w/lab

Course Units: 1.0 Organisms and their environment, population and community ecology, and the structure and integration of ecosystems will be discussed along with a focus on animal community ecology. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 320L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS **Note:** There may be field trips requiring scheduling outside of normal class time.

CHM 352 - Quantum Chemistry

Course Units: 1.0 Fundamentals of quantum mechanics and its application to chemical bonding and spectroscopy. **Prerequisite(s):** CHM 240 , and MTH 115 or MTH 115H ; PHY 111 or PHY 121 or IMP 121 **Corequisite(s):** CHM 352L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week.

GEO 203 - Lakes and Environmental Change

Course Units: 1.0 Modern limnology and the record of environmental change as recorded in the physical and chemical properties of lake water and lake sediments. Includes a term-long research project on two local lakes, and the interpretation of the proxy paleoenvironmental indicators contained in sediment cores from these lakes. **Prerequisite(s):** Any 100-level geosciences or biology course or ENS 100 **Corequisite(s):** GEO 203L **ISP:** ENS

GEO 220 - Mineral Science

Course Units: 1.0 Mineral science is foundational for other geology and environmental science courses, as well as many other scientific disciplines that encounter crystalline solids. This class provides students with a solid understanding of minerals, which are the building blocks of all rocks on this and every other planet, and provide most of our industrial resources, many building materials and precious gems. A successful student leaving this class will be able to identify most common minerals when they occur "in the wild" and be familiar with their internal structure and crystal chemistry. The practical use of state-of-the- art analytical techniques common to the study of solid materials is emphasized to elucidate the links between internal crystalline structure and macroscopic physical properties. Students will use the scanning electron microscope, the x-ray diffractometer and the polarizing light microscope. In addition to learning the fundamentals of mineral science, students will gain appreciation for the beauty and symmetry present in the natural world. **Prerequisite(s):** CHM 101 or equivalent and any 100-level geosciences course. **Corequisite(s):** GEO 220L **ISP:** ENS

GEO 302 - Geochemical Systems and Modeling

Course Units: 1.0 Investigation of the Earth as a chemical system and using chemical tools to understand geologic processes. Topics include origin of the elements, formation and differentiation of the Earth, igneous processes, radioactive isotopes and radiometric dating, and geochemistry of near-surface waters and the oceans. Work includes theory, sample collection, sample preparation, chemical analysis using in-house equipment, and computer modeling of the using the acquired data. Includes readings and discussions of the contemporary geochemical literature. **Prerequisite(s):** CHM 101 or equivalent **Corequisite(s):** GEO 302L **ISP:** ENS

GEO 305 - Global Biogeochemical Cycles

Course Units: 1.0 Biology, geology and chemistry are intricately linked to form the world around us. Biogeochemical cycles set the stage for life on Earth. This course explores the carbon, nitrogen, water, phosphorus, and sulfur cycles in the critical zone and oceans. The critical zone is the terrestrial layer that extends from the bedrock to the top of vegetation, and this course continues into estuaries and the open ocean. We investigate how biological (e.g., primary production, respiration), anthropogenic (e.g., urbanization, pollution) and geological processes (e.g., tectonics, rock weathering) influence the critical zone and oceans, and in turn how these cycles influence life and climate. Field studies focus on tropical marine biogeochemistry of coral reefs, mangrove forests, seagrass meadows, lagoons and estuaries. Course includes a required week-long field trip to a remote field station in Panama. There are additional costs associated with field trip expenses, but students can apply for travel assistance. All students must meet basic term abroad requirements and submit an application. This course is open to all students, but preference will be given to those with a declared major in geosciences, environmental science, chemistry, or biology. **Cross-Listed:** BIO 235 **Corequisite(s):** GEO 305L **Prereq/Corequisite(s):** Take a course from either BIO, CHM, GEO or ENS 100 . **CC:** WAC, WAC-R **ISP:** ENS

Also recommended

Additional upper-level chemistry courses, additional selections from the in-depth course electives for this track, courses in environmental ethics, history, literature and/or policy.

Materials Chemistry Track:

Two required courses

CHM 352 - Quantum Chemistry

Course Units: 1.0 Fundamentals of quantum mechanics and its application to chemical bonding and spectroscopy. **Prerequisite(s):** CHM 240 , and MTH 115 or MTH 115H ; PHY 111 or PHY 121 or IMP 121 **Corequisite(s):** CHM 352L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week.

CHM 360 - Advanced Inorganic Chemistry

Course Units: 1.0 This course focuses on advanced topics in inorganic chemistry, including: Spectroscopic methods, homogeneous and heterogeneous catalysis, organometallics, materials chemistry, inorganic nanomaterials, and bioinorganic chemistry. **Prerequisite(s):** CHM 260 and CHM 351 or permission of the instructor. **CC:** SET

Two elective courses chosen from

CHM 224 - Frontiers of Nanotechnology and Nanomaterials

Course Units: 1.0 An overview of nanotechnology and nanomaterials including interdisciplinary perspectives from engineering, materials science, chemistry, physics, and biology with an emphasis on how applications (sensors, energy materials, nanocomposites, and biomaterials) can be used to solve global challenges. **Cross-Listed:** ESC 224 **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121;MTH 112 ; and CHM 101 or CHM 110H ; or permission of instructor. **CC:** SET, GETS

CHM 340 - Chemical Instrumentation

Course Units: 1.0 Theory and practice of modern methods of analysis with emphasis on spectroscopic, chromatographic, electrochemical, and surface science techniques, as well as electronic measurements. **Prerequisite(s):** CHM 231 , CHM 240 , and one course in physics or permission of the instructor. **Corequisite(s):** CHM 340L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

ESC 324 - Advanced Topics in Nanoscience

Course Units: 1.0 In-depth coverage of micro and nanoscale microscopy, including scanning electron microscopy and atomic force microscopy and their related modes and diagnostics methods. The course will feature special topics in nanoscience/nanotechnology, such as nanochemistry and structure/property relationships in select nanomaterial systems and/or biological nanomachines, self-assembly of bionanomaterials, and use of nanomaterials for biological sensors. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 ; MTH 115; and CHM 101 or CHM 110; CHM 224 or ESC 224 or MER 213 ; or permission of instructor. **CC:** SET, GETS

GEO 220 - Mineral Science

Course Units: 1.0 Mineral science is foundational for other geology and environmental science courses, as well as many other scientific disciplines that encounter crystalline solids. This class provides students with a solid understanding of minerals, which are the building blocks of all rocks on this and every other planet, and provide most of our industrial resources, many building materials and precious gems. A successful student leaving this class will be able to identify most common minerals when they occur "in the wild" and be familiar with their internal structure and crystal chemistry. The practical use of state-of-the- art analytical techniques common to the study of solid materials is emphasized to elucidate the links between internal crystalline structure and macroscopic physical properties. Students will use the scanning electron microscope, the x-ray diffractometer and the polarizing light microscope. In addition to learning the fundamentals of mineral science, students will gain appreciation for the beauty and symmetry present in the natural world. **Prerequisite(s):** CHM 101 or equivalent and any 100-level geosciences course. **Corequisite(s):** GEO 220L **ISP:** ENS

GEO 302 - Geochemical Systems and Modeling

Course Units: 1.0 Investigation of the Earth as a chemical system and using chemical tools to understand geologic processes. Topics include origin of the elements, formation and differentiation of the Earth, igneous processes, radioactive isotopes and radiometric dating, and geochemistry of near-surface waters and the oceans. Work includes theory, sample collection, sample preparation, chemical analysis using in-house equipment, and computer modeling of the using the acquired data. Includes readings and discussions of the contemporary geochemical literature. **Prerequisite(s):** CHM 101 or equivalent **Corequisite(s):** GEO 302L **ISP:** ENS

MER 213 - Material Science

Course Units: 1.0 A basic engineering science course dealing with crystal structure, imperfections in solids, diffusion, mechanical properties of metals, dislocations and strengthening mechanisms, phase diagrams, phase transformations in metals, structure and properties of ceramics, and polymeric structures. The principles formulated in materials science allow engineers to understand the nature and behavior of a wide variety of engineering materials. Includes a laboratory component. **Prerequisite(s):** CHM 101

MER 214 - Mechanics of Materials 1

Course Units: 1.0 A branch of applied mechanics that deals with the behavior of solid bodies subjected to various types of loading. The solid bodies considered in this course include axially-loaded members, shafts in torsion, thin shells, beams, and structures that are assemblies of these components. Strength of materials analysis determines the stresses,

strains, and displacements produced by the loads. Includes a laboratory component. **Prerequisite(s):** MER 201 and MER 262 **Corequisite(s):** MER 214L **CC:** WAC

MER 354 - Advanced Materials

Course Units: 1.0 Advanced materials for engineers are introduced with a focus on the properties and applications of the materials. Several advanced materials currently in the research and development stage will also be introduced with a discussion of the needed infrastructure to bring the materials to production. Topics include composites, engineering alloys, microelectromechanical systems (MEMS) devices, nanomaterials, semiconductors and microelectronic fabrication, and superconductors. **Prerequisite(s):** Prerequisite: MER 213 or by permission of the instructor. **CC:** SET

PHY 311 - Advanced Topics in Physics 2

Course Units: 1.0 Course topic for each year to be chosen from those listed in Physics 310 depending upon student interest. Course open to juniors and seniors only. Enrollment by permission of the instructor. **Prerequisite(s):** PHY 122 **CC:** WAC

Also recommended

Additional courses in biology, chemistry, physics, computer science, and/or engineering.

Note:

** Some of the elective choices for these tracks are offered by other academic departments. There is no expectation that other departments will guarantee space in their courses for chemistry students. In addition, there is no expectation that those departments will waive any prerequisites for their courses.

Requirements for Honors in Chemistry:

Candidates for honors in chemistry must: 1) have a cumulative index of at least 3.5; 2) have an index of at least 3.5 in the courses of their major, including courses associated with the thesis but excluding cognates; 3) have at least three A or A- grades in major courses (not including any given in connection with the writing of the thesis); 4) submit evidence of independent work in chemistry of substance and distinction in the form of a thesis that shall have been awarded a grade of at least A-. Candidates must fulfill the College-wide criteria for honors and must be formally nominated by the Chemistry Department.

Course Selection Guidelines

Placement: Any student interested in taking introductory chemistry is required to take a placement examination to determine the appropriate course. Exception: a student wishing to take introductory chemistry who has scored 4 or 5 on the AP chemistry exam will be automatically placed into CHM 110H and cannot take CHM 101. Students who have scored 4 or 5 on the AP chemistry exam or who successfully complete CHM 110H will also receive AP credit for CHM 101. CHM 110H is offered only in the fall term. [Note: occasionally a student who places out of CHM 101 may find it more appropriate to take CHM 102 instead of CHM 110H. This decision must be made in consultation with the Chair of the Chemistry Department.]

Complex Questions: Global Challenges & Social Justice Courses (for students entering Union in Fall 2022 and beyond): CHM 102 and CHM 110H address global challenges from a natural and physical science perspective (GNPS). CHM 224 addresses global challenges from an engineering, technology and society perspective (GETS).

Common Curriculum Courses (for students entering Union prior to Fall 2022): CHM 060 and CHM 080 and CHM 090 are designed for the general college community. They do not count toward the chemistry major nor for interdepartmental majors that include chemistry. CHM 101, CHM 102, and CHM 110H are also appropriate courses for students wishing to complete their Common Curriculum requirements.

Prerequisites: There is a strict prerequisite structure for the chemistry curriculum, so it is very important to review individual course descriptions in planning when to take the various courses. Every 200-level course has at least one 100-level chemistry course prerequisite, and some have other 200-level chemistry courses and/or cognate courses as prerequisites. Every 300-level course has at least one 200-level chemistry course prerequisite, and some have other 300-level chemistry courses and/or cognate courses as prerequisites.

Repeating Chemistry Courses: Chemistry courses may be repeated according to the college policy, if space permits, with the following exception: a student cannot repeat a chemistry course that is a prerequisite for another chemistry or biochemistry course that the student has successfully completed. Students who want to repeat a chemistry course should consult with the Chair of the Chemistry Department.

Chemistry, Basic, B.S.

Requirements for the Basic Chemistry Major:

Eight core courses

CHM 110H - Honors Introductory Chemistry

Course Units: 1.0 A laboratory-intensive course that covers the main topics of CHM 101 and CHM 102 and is meant to replace those courses for students who have strong backgrounds in introductory chemistry. **Prerequisite(s):** Students who have scored 4 or 5 on the AP chemistry exam will be automatically placed into CHM 110H; see Course Selection guidelines for more information on placement. **CC:** SCLB, GNPS **ISP:** ENS **Note:** Students who have scored 4 or 5 on the AP chemistry exam or who successfully complete CHM 110H will also receive AP credit for CHM 101 .

CHM 231 - Organic Chemistry 1

Course Units: 1.0 A mechanistic approach to the chemistry of carbon compounds organized around the reactions of functional groups. We cover alkanes, cycloalkanes, alcohols, alkyl halides (nucleophilic substitution and elimination), alkenes (addition and elimination), alkynes, spectroscopy (IR and NMR) and computer molecular modeling. **Prerequisite(s):** CHM 102 or CHM 110H **Corequisite(s):** CHM 231L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

CHM 232 - Organic Chemistry 2

Course Units: 1.0 A continuation of CHM 231 including an emphasis on synthesis, and the chemistry of conjugated and aromatic compounds, carbonyl compounds, and an introduction to important classes of biomolecules. **Prerequisite(s):** CHM 231 **Corequisite(s):** CHM 232L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week.

CHM 240 - Analytical Chemistry

Course Units: 1.0 A course that focuses on the quantitative analysis of samples. Classroom and laboratory emphasis on statistical treatment of data, classical and instrumental methods of chemical analysis, and chemical equilibrium. **Prerequisite(s):** CHM 231 **Corequisite(s):** CHM 240L **CC:** SCLB, WAC-R **Lecture/Lab Hours** Six lab hours each week. **ISP:** ENS

CHM 260 - Inorganic Chemistry

Course Units: 1.0 Foundations of inorganic chemistry focuses on bonding, acid/base properties, structure and symmetry, and reactivity of transition metal compounds. The laboratory portion of the course is centered on the synthesis and characterization of inorganic compounds and investigation of their electronic properties. **Prerequisite(s):** CHM 231 or permission of the instructor. **Corequisite(s):** CHM 260L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week.

CHM 340 - Chemical Instrumentation

Course Units: 1.0 Theory and practice of modern methods of analysis with emphasis on spectroscopic, chromatographic, electrochemical, and surface science techniques, as well as electronic measurements. **Prerequisite(s):** CHM 231 , CHM 240 , and one course in physics or permission of the instructor. **Corequisite(s):** CHM 340L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

CHM 351 - Kinetics and Thermodynamics

Course Units: 1.0 Properties of gases; fundamentals of statistical mechanics; fundamentals of thermodynamics including heats of reactions, phase transitions, and chemical equilibria; chemical kinetics. **Prerequisite(s):** CHM 240 , PHY 110 or PHY 120 and MTH 115 or MTH 115H **Corequisite(s):** CHM 351L **CC:** SCLB, WAC **Lecture/Lab Hours** Four lab hours each week.

CHM 352 - Quantum Chemistry

Course Units: 1.0 Fundamentals of quantum mechanics and its application to chemical bonding and spectroscopy. **Prerequisite(s):** CHM 240 , and MTH 115 or MTH 115H ; PHY 111 or PHY 121 or IMP 121 **Corequisite(s):** CHM 352L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week.

Note:

*Students not placed into CHM 110H may substitute the two-course CHM 101/CHM 102 sequence.

One course in biochemistry

selected from:

BCH 335 - Survey of Biochemistry

Course Units: 1.0 A survey of topics in biochemistry including the structure, conformation, and properties of the major classes of biomolecules (proteins, nucleic acids, lipids, and carbohydrates); enzyme mechanisms, kinetics, and regulation; metabolic transformations; and bioenergetics and metabolic control. Emphasis will be on the fundamentals of biochemistry and our current understanding in the field. **Cross-Listed:** BIO 335 and CHM 335 **Prerequisite(s):** BIO 205 and CHM 231 **Prereq/Corequisite(s):** Not open to students who have completed either BCH 380 or BCH 382 .

BCH 380 - Biochemistry: Nucleic Acids, Carbohydrates, and Lipids

Course Units: 1.0 An in-depth investigation into some of the macromolecules which are essential to life's processes. The course focuses on non-protein molecules and their unique chemical properties. **Cross-Listed:** BIO

380 **Prerequisite(s):** BIO 205 and CHM 232 or permission of the instructor. **Corequisite(s):** BCH 380L **Prereq/Corequisite(s):** Not open to students who have completed BCH 335 **CC:** WAC **Lecture/Lab Hours** Three lab hours each week.

BCH 382 - Biochemistry: Structure and Catalysis

Course Units: 1.0 Structure and function of proteins/enzymes including purification, mechanism, kinetics, regulation, metabolism, and a detailed analysis of several classic protein systems. **Cross-Listed:** BIO 382 and CHM 382 **Prerequisite(s):** CHM 232 **Corequisite(s):** BCH 382L **Prereq/Corequisite(s):** Not open to students who have completed BCH 335 . **CC:** SCLB, WAC-R **Lecture/Lab Hours** Four lab hours each week.

one chemistry-related elective

selected from:

CHM 224 - Frontiers of Nanotechnology and Nanomaterials

Course Units: 1.0 An overview of nanotechnology and nanomaterials including interdisciplinary perspectives from engineering, materials science, chemistry, physics, and biology with an emphasis on how applications (sensors, energy materials, nanocomposites, and biomaterials) can be used to solve global challenges. **Cross-Listed:** ESC 224 **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121;MTH 112 ; and CHM 101 or CHM 110H ; or permission of instructor. **CC:** SET, GETS

CHM 245 - Environmental Chemistry

Course Units: 1.0 A course focused on the role of chemical principles such as chemical equilibrium, kinetics and chemical structure in understanding natural environmental cycles and the impacts of human activity on those cycles. Topics covered include: aquatic chemistry and water pollution, atmospheric chemistry and air pollution, energy and climate change, and toxic organic chemicals in the environment. **Prerequisite(s):** CHM 231 **CC:** SET **ISP:** ENS

CHM 330 - Medicinal Chemistry

Course Units: 1.0 This course focuses on medicinal chemistry and the underlying principles of organic chemistry. Topics to be covered include drug discovery and approval, lead modification, drug-receptor interactions, structure-activity relationships (SAR), drug delivery, pro-drugs and biomimetics. Physicochemical properties and synthetic approaches to drug families will be emphasized. **Prerequisite(s):** CHM 232 **CC:** SET

CHM 332 - Synthetic Methods

Course Units: 1.0 This course focuses on developing the common laboratory techniques used in modern synthetic organic chemistry and the underlying principles of organic chemistry covered. Topics to be covered will be in the form of three synthetic projects. **Prerequisite(s):** CHM 232 **CC:** SCLB **Lecture/Lab Hours** Six lab hours each week plus additional instrumentation time outside of lab.

CHM 354 - Chemical Applications of Group Theory

Course Units: 1.0 A course on the role of molecular symmetry in chemistry. Topics include symmetry point groups; bonding in organic, inorganic, and organometallic compounds; and vibrational spectroscopy. **Prerequisite(s):** CHM 232 and CHM 352 , MTH 115 , and PHY 111 or PHY 121 **Prereq/Corequisite(s):** CHM 352 may be taken concurrently. **CC:** SET

CHM 360 - Advanced Inorganic Chemistry

Course Units: 1.0 This course focuses on advanced topics in inorganic chemistry, including: Spectroscopic methods, homogeneous and heterogeneous catalysis, organometallics, materials chemistry, inorganic nanomaterials, and bioinorganic chemistry. **Prerequisite(s):** CHM 260 and CHM 351 or permission of the instructor. **CC:** SET

ESC 324 - Advanced Topics in Nanoscience

Course Units: 1.0 In-depth coverage of micro and nanoscale microscopy, including scanning electron microscopy and atomic force microscopy and their related modes and diagnostics methods. The course will feature special topics in nanoscience/nanotechnology, such as nanochemistry and structure/property relationships in select nanomaterial systems and/or biological nanomachines, self-assembly of bionanomaterials, and use of nanomaterials for biological sensors. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 ; MTH 115; and CHM 101 or CHM 110; CHM 224 or ESC 224 or MER 213 ; or permission of instructor. **CC:** SET, GETS

GEO 302 - Geochemical Systems and Modeling

Course Units: 1.0 Investigation of the Earth as a chemical system and using chemical tools to understand geologic processes. Topics include origin of the elements, formation and differentiation of the Earth, igneous processes, radioactive isotopes and radiometric dating, and geochemistry of near-surface waters and the oceans. Work includes theory, sample collection, sample preparation, chemical analysis using in-house equipment, and computer modeling of the using the acquired data. Includes readings and discussions of the contemporary geochemical literature. **Prerequisite(s):** CHM 101 or equivalent **Corequisite(s):** GEO 302L **ISP:** ENS

Additional Requirements

Mathematics through:

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

Two terms of introductory physics:

PHY 110 - Physics for the Life Sciences 1

Course Units: 1.0 An introduction to classical mechanics, fluids, and thermodynamics with applications in the life sciences. Students must major in a life science or be admitted by permission of the instructor. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **Corequisite(s):** PHY 110L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

and

PHY 111 - Physics for the Life Sciences 2

Course Units: 1.0 An introduction to electromagnetism, optics, and the structure of matter with applications in the life sciences. **Prerequisite(s):** PHY 110 , PHY 120 ,MTH 102 , MTH 112 ,or MTH 113 **Corequisite(s):** PHY 111L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

or

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

and

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

Senior Writing Experience (WS)

Chemistry majors may fulfill their WS requirement through a two- or three-term senior research thesis under the supervision of a faculty member in the Chemistry Department (CHM 491 , CHM 492 , CHM 493), through performing thesis research in another department (if a double major or ID major), or through an additional writing component added to an upper-level chemistry course (with permission of the instructor and the Chair of the Chemistry Department).

Requirements for Honors in Chemistry:

Candidates for honors in chemistry must: 1) have a cumulative index of at least 3.5; 2) have an index of at least 3.5 in the courses of their major, including courses associated with the thesis but excluding cognates; 3) have at least three A or A- grades in major courses (not including any given in connection with the writing of the thesis); 4) submit evidence of independent work in chemistry of substance and distinction in the form of a thesis that shall have been awarded a grade of at least A-. Candidates must fulfill the College-wide criteria for honors and must be formally nominated by the Chemistry Department.

Course Selection Guidelines

Placement: Any student interested in taking introductory chemistry is required to take a placement examination to determine the appropriate course. Exception: a student wishing to take introductory chemistry who has scored 4 or 5 on the AP chemistry exam will be automatically placed into CHM 110H and cannot take CHM 101. Students who have scored 4 or 5 on the AP chemistry exam or who successfully complete CHM 110H will also receive AP credit for CHM 101. CHM 110H is offered only in the fall term. [Note: occasionally a student who places out of CHM 101 may find it more appropriate to take CHM 102 instead of CHM 110H. This decision must be made in consultation with the Chair of the Chemistry Department.]

Complex Questions: Global Challenges & Social Justice Courses (for students entering Union in Fall 2022 and beyond): CHM 102 and CHM 110H address global challenges from a natural and physical science perspective (GNPS). CHM 224 addresses global challenges from an engineering, technology and society perspective (GETS).

Common Curriculum Courses (for students entering Union prior to Fall 2022): CHM 060 and CHM 080 and CHM 090 are designed for the general college community. They do not count toward the chemistry major nor for

interdepartmental majors that include chemistry. CHM 101, CHM 102, and CHM 110H are also appropriate courses for students wishing to complete their Common Curriculum requirements.

Prerequisites: There is a strict prerequisite structure for the chemistry curriculum, so it is very important to review individual course descriptions in planning when to take the various courses. Every 200-level course has at least one 100-level chemistry course prerequisite, and some have other 200-level chemistry courses and/or cognate courses as prerequisites. Every 300-level course has at least one 200-level chemistry course prerequisite, and some have other 300-level chemistry courses and/or cognate courses as prerequisites.

Repeating Chemistry Courses: Chemistry courses may be repeated according to the college policy, if space permits, with the following exception: a student cannot repeat a chemistry course that is a prerequisite for another chemistry or biochemistry course that the student has successfully completed. Students who want to repeat a chemistry course should consult with the Chair of the Chemistry Department.

Civil Engineering

Chair: Carolyn Rodak

Civil Engineering, B.S.

Course requirements with a typical schedule are given below. Students should consult with their academic advisor about the scheduling and sequencing of courses. A total of 40 courses is required for the major.

Requirements for the Major

A total of 40 courses including the following:

Math and Science

Select one Calculus Sequence

Sequence One

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

MTH 115H - Enriched Differential Vector Calculus

Course Units: 1 **CC:** QMR

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

MTH 110 - Calculus 1: Differential Calculus

Course Units: 1.0 Differential calculus of functions of a single variable. Limits, continuity, differentiation, computational aspects of Maclaurin and Taylor polynomials and series, and applications. **Note:** Not intended for students who have passed MTH 059 ,MTH 105 , MTH 113 , MTH 110P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

Sequence Two

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

MTH 115H - Enriched Differential Vector Calculus

Course Units: 1 **CC:** QMR

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

Sequence Three

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

IMP 120 - Integrated Math/Physics

Course Units: 2.0 An introductory team-taught, two-term-long sequence of integrated courses, two in mathematics and two in physics, roughly spanning the content of MTH 115 , MTH 117 , PHY 120 and PHY 121 . Designed for engineering students as well as other interested students. **Prerequisite(s):** MTH 113 , by invitation. **CC:** QMR, SCLB, GNPS **ISP:** ENS

IMP 121 - Integrated Math/Physics

Course Units: 2.0 An introductory team-taught, two-term-long sequence of integrated courses, two in mathematics and two in physics, roughly spanning the content of MTH 115 , MTH 117 , PHY 120 and PHY 121 . Designed for engineering students as well as other interested students. **Prerequisite(s):** IMP 120 **CC:** QMR, SCLB **ISP:** ENS

Sequence Four

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

MTH 105 - Differential Calculus with Precalculus

Course Units: 1.0 Differential calculus of functions of a single variable, supplemented with supporting precalculus. Limits, continuity, differentiation, and applications. **CC:** QMR **ISP:** ENS **Note:** Not intended for students with credits for MTH 059 ,MTH 110 , MTH 113 , MTH 110P or MTH 113P.

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

Additional Requirements:

MTH 130 - Ordinary Differential Equations

Course Units: 1.0 Topics include first and second-order differential equations and first-order systems, including analytic, geometric, and numerical techniques, classification of first-order linear systems by eigenvalues, forcing and resonance, and the Laplace transform. Applications include but are not limited to population models, RC circuits, and damped and undamped harmonic oscillators. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 **Note:** Not open to students who have passed MTH 234 . **CC:** GDQR

CHM 101 - Introductory Chemistry 1

Course Units: 1.0 This is an introductory course that focuses on atomic and molecular structure, chemical bonding, stoichiometry, aqueous chemical reactions, and the properties of gases, liquids, solids and solutions. **Prerequisite(s):** Not open to students who have scored 4 or 5 on the AP Chemistry Exam or who have completed CHM 110H . All students who wish to enroll in an introductory chemistry course must take a placement examination to determine the appropriate course. See Course Selection Guidelines for more information on placement. **Corequisite(s):** CHM 101L **CC:** SCLB **Lecture/Lab Hours** Three lab hours/week,6/10 weeks. **ISP:** ENS

or

CHM 110H - Honors Introductory Chemistry

Course Units: 1.0 A laboratory-intensive course that covers the main topics of CHM 101 and CHM 102 and is meant to replace those courses for students who have strong backgrounds in introductory chemistry. **Prerequisite(s):** Students who have scored 4 or 5 on the AP chemistry exam will be automatically placed into CHM 110H; see Course Selection guidelines for more information on placement. **CC:** SCLB, GNPS **ISP:** ENS **Note:** Students who have scored 4 or 5 on the AP chemistry exam or who successfully complete CHM 110H will also receive AP credit for CHM 101 .

Natural Science Elective (choose one)

ENS 100 - Introduction to Environmental Studies

Course Units: 1.0 An introduction to environmental studies from a scientific, policy, and engineering perspective. This course covers human-environment interactions, with a focus on the impacts of human activities on natural systems such as climate, air, water, and species diversity and the ensuing environmental injustice. The course discusses sustainable solutions for how we can build systems that will support billions of humans and the natural world. Fieldwork during lab periods involves the investigation of local environmental problems and solutions. This course is intended for first- and second-year Environmental Science and Environmental Policy majors, but it is open to all students. **Corequisite(s):** ENS 100L **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 110 - Introduction to Geosciences

Course Units: 1.0 Examination of Earth materials and processes: How our dynamic planet works including plate tectonics, geologic age determination, processes that form the rocks we see at the Earth's surface, development of the stunning variety of landscapes we see, and other topics of contemporary interest including floods, underground water resources, coastal erosion, earthquakes, landslides, volcanoes, and climate change. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 110L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 112 - Environmental Geology

Course Units: 1.0 The increasing interplay between the environment and human activity has profound effects on our landscape and society. This course focuses on anthropogenic issues such as climate change, soil and groundwater contamination, traditional petroleum resource extraction and dependence, mineral and water resources, and alterative sources of energy. To understand how humans have perturbed the natural environment, it is critical to understand geologic principles and processes. The course also explores natural disasters including earthquakes, volcanoes, hurricanes, landslides, floods, and coastal erosion and their effects on different segments of society, as the impacts of natural disasters are affected by various socio-economic factors. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 112L **CC:** SCLB, GNPS **ISP:** ENS, STS

Engineering and Computer Science:

ESC 100 - Exploring Engineering

Course Units: 1.0 An introduction to engineering including fundamental topics core to engineering. The course includes a weekly design studio that emphasizes engineering design, teamwork, technical writing and ethics through several individual and team design projects. Not available to junior or senior engineering students. **Corequisite(s):** ESC 100L **CC:** SET, GETS **ISP:** STS **Note:** General engineering course common to more than one program.

One course from "Introduction to Computer Science"

CSC 108 - Scientific Computing: Introduction to Computer Science

Course Units: 1.0 Computers are used as tools in analyzing and solving scientific problems as well as being embedded in many applications and experimental equipment used by today's scientists. This course is designed to introduce

students to computer programming and problem solving through the use of Python. Python is a language commonly used by the scientific community, and we will focus on using it to address scientific problems, using extensions that facilitate scientific computing. CC: QMR, SET Note: A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 105 - Game Development: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a computer games theme. Introduces students to algorithms, basic data structures, and programming techniques. Computer game development is used as an example application area and students implement their own games throughout the course. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area, focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

Civil Engineering Core:

CEE 101 - Engineering Graphics

Course Units: 1 Engineering graphics with emphasis on engineering drawings and introduction to modeling. Topics include sketching, descriptive geometry, sectioning, auxiliary views, site drawings, CAD, and building techniques. AutoCAD software package is used extensively in this course. **CC:** GCAD

CEE 201 - Mechanics 1

Course Units: 1 Analysis of forces acting on particles and rigid bodies in static equilibrium; equivalent systems of forces; friction; centroids and moments of inertia; introduction to energy methods. **Prerequisite(s):** PHY 120 , MTH 110 (or equivalent)

CEE 203 - Probability & Statistics

Course Units: 1 An introductory calculus-based statistics class for engineers covers topics in data collection, probability, continuous and discrete probability distributions, data collection and presentation, statistical inference, confidence limits, uncertainty analysis, tolerance intervals, analysis of variance, least squares regression, and an introduction to design of experiments. **Prerequisite(s):** MTH 115

CEE 212 - Mechanics 2

Course Units: 1 An introduction to kinematics of 3-D motion of rigid bodies, momentum principles for rigid bodies, variational formulation, stability of motion, vibration analysis, and continuous systems. **Prerequisite(s):** CEE 201 , MTH 115 or IMP 121

CEE 222 - Structural Materials w/Lab

Course Units: 1 This course develops an understanding of the natural characteristics, methods of manufacturing, structural design of sections, construction, and testing of civil engineering materials. The methods of testing are those standardized by the American Society for Testing and Materials (ASTM). Basic civil engineering materials covered in this course are aggregates, masonry, wood, Portland cement concrete, and asphalt. Professional design procedures recommended by the American Concrete Institute (ACI), the Masonry Society, and the Asphalt Institute (AI) will be used. **Prerequisite(s):** CHM 101

CEE 240 - Surveying

Course Units: 1 Students will be taught surveying theory and the use of levels, theodolites, microstations, and distance measuring devices. They will collect, analyze, and assemble data into a plan. **Prerequisite(s):** CEE 101

CEE 244 - Mechanics of Materials w/Lab

Course Units: 1 This course is a basic engineering course in applied mechanics that deals with the behavior of solid bodies subjected to various types of loading. Solid bodies considered in this course include axially loaded members, shafts in torsion, thin shells, beams, and columns, as well as structures that are assemblies of these components. The objectives of strength of materials analysis are the determination of the stresses, strains, and displacements, produced by the loads. Knowing these quantities for all values of load up to the failure load gives a complete picture of the behavior of the body. **Prerequisite(s):** CEE 201

CEE 260 - Thermo-Fluid w/Lab

Course Units: 1

Thermal-Fluid Systems is an integrated study of fundamental topics in thermodynamics, fluid statics and mechanics. The course develops the conservation principles for mass, energy, and linear momentum for control volume analysis as well as the 2nd Law of Thermodynamics. Dimensional analysis principles are developed and applied to incompressible

flow in pipes, open channel flow, power generation systems, and air-conditioning focusing on the control volume approach. **Prerequisite(s):** CEE 201 , MTH 115 or IMP 121

CEE 301 - Engineering Comp. Modeling

Course Units: 1 Basic programming concepts introduced in CS10X are expanded to investigate computational solutions to engineering problems. A progression of numerical solutions are investigated with student written codes and a gradual progression of implementing library software. Topics include solution techniques to 1-D nonlinear equations, linear systems of equations and nonlinear systems of equations. Interpolation and curve fitting techniques are developed using engineering data. Finite difference integration and differentiation are introduced with a natural progression to solving 1-D, first order differential equations using Euler, Heun, and Runge Kutta algorithms. Higher order differential equations are analyzed using reduction of order. **Prerequisite(s):** CSC 10X

CEE 310 - Fundamental Theory of Structure

Course Units: 1 Structural analysis of determinate and indeterminate trusses, beams, and frames including reactions, axial forces, shear, and moments. Deflections estimated by moment area, conjugate beam, and virtual work methods. Influence lines, compatibility, slope deflection, and moment distribution methods are covered. Students must complete computer analysis and design projects **Prerequisite(s):** CEE 244

CEE 322 - Soil Mechanics w/Lab

Course Units: 1

An introduction to the behavior of soils under different loading conditions. The course explores the natural characteristics, methods of classification, and testing of soils as an engineering material. The methods of testing are those standardized by the American Society for Testing and Materials (ASTM). Basic topics covered are soil exploration, composition, permeability, compaction, compressibility, shear strength and stresses within a soil mass, slope stability, and environmental geotechnology. **Prerequisite(s):** CEE 201

CEE 330 - Fund. of Transportation Eng.

Course Units: 1 An overview of transportation systems and theory. The course will introduce the field of transportation engineering, traffic operations and safety, scheduling, vehicle motion and flow, capacity and level of service, transportation planning, highway drainage, and terminal design. **Prerequisite(s):** CEE 203

CEE 340 - Construction Management

Course Units: 1 Developing a "life cycle" viewpoint in discussing the participants, the processes, and techniques of project management for construction. Topics include an introduction to bid packages, contracts, planning, scheduling, and estimation; orthographic and isometric drawings, dimensioning, auxiliary views, sectioning, and tolerances. Preparation of working drawings and solution of drafting problems in civil engineering related areas such as drawings of steel structures, concrete structures, and foundation layouts. Computer aided graphical representation and data analysis using two and three dimensional charts and plots. **Prerequisite(s):** CEE 101 , CEE 3XX

CEE 350 - Fundamentals of Environmental Engineering

Course Units: 1 This course provides an overview of the foundational principles of physics, chemistry, biology, and engineering to understanding and addressing the major issues facing environmental engineers. In particular,

quantitative assessments of water quality, air quality, soil quality, and solid/hazardous waste management will be addressed with a focus on minimizing the human health and environmental impacts of contamination. A problem-solving and case study approach will be used to address the topics covered and quantitative methods of mass and energy balances will be emphasized throughout the term. The technical aspect of environmental engineering will be contextualized through the chosen case studies and through an overview of environmental regulations and policy in the US. **Prerequisite(s):** CEE 260

Civil Engineering Electives:

Four courses from CEE electives or other engineering courses subject to approval with at least three at the 300-level or higher. Student should consult with their advisors.

Capstone Design:

CEE 491 - Capstone Design 1

Course Units: 1 In this first term of the two term design course sequence students work in teams to research, ideate, and design potential solutions to open-ended projects. The first term of this design course will focus on professional practice, effective teaming and communication, and the beginning phases of the design process including but not limited to exploratory brainstorming, relevant documentation and regulations, site planning, and sustainability in design. The term will culminate with a presentation and written report detailing design assumptions, site and project constraints, case studies, and alternatives considered. **Prerequisite(s):** CEE 440 or any CEE 4XX

CEE 492 - Capstone Design 2

Course Units: 1 In this second term of the two term design course sequence students work in teams to select, design, prototype (if appropriate), and effectively present solutions to open-ended projects. The second term focuses on additional development of teaming and communication skills, discussion of professional ethics and licensure, design selection, relevant regulatory documents, and the detailed design needed for Civil and Environmental Engineering designs. Teams will create presentations and written reports that cover the execution of the selected design in detail including technical calculations and drawings, cost, safety, design/construction schedule and feasibility. **Prerequisite(s):** CEE 491

Electives:

Electives should be chosen in consultation with the student's advisor to meet the Complex Questions: Global Challenges & Social Justice requirements.

Sample schedule starting with MTH 110:

Course requirements with a typical schedule are given below. Students should consult with their academic advisor about the scheduling and sequencing of courses. A total of 40 courses is required for the major.

First Year

ESC 100 - Exploring Engineering

Course Units: 1.0 An introduction to engineering including fundamental topics core to engineering. The course includes a weekly design studio that emphasizes engineering design, teamwork, technical writing and ethics through several individual and team design projects. Not available to junior or senior engineering students. **Corequisite(s):** ESC 100L **CC:** SET, GETS **ISP:** STS **Note:** General engineering course common to more than one program.

ENS 100 - Introduction to Environmental Studies

Course Units: 1.0 An introduction to environmental studies from a scientific, policy, and engineering perspective. This course covers human-environment interactions, with a focus on the impacts of human activities on natural systems such as climate, air, water, and species diversity and the ensuing environmental injustice. The course discusses sustainable solutions for how we can build systems that will support billions of humans and the natural world. Fieldwork during lab periods involves the investigation of local environmental problems and solutions. This course is intended for first- and second-year Environmental Science and Environmental Policy majors, but it is open to all students. **Corequisite(s):** ENS 100L **CC:** SCLB, GNPS **ISP:** ENS, STS

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

CEE 101 - Engineering Graphics

Course Units: 1 Engineering graphics with emphasis on engineering drawings and introduction to modeling. Topics include sketching, descriptive geometry, sectioning, auxiliary views, site drawings, CAD, and building techniques. AutoCAD software package is used extensively in this course. **CC:** GCAD

MTH 110 - Calculus 1: Differential Calculus

Course Units: 1.0 Differential calculus of functions of a single variable. Limits, continuity, differentiation, computational aspects of Maclaurin and Taylor polynomials and series, and applications. **Note:** Not intended for students who have passed MTH 059 ,MTH 105 , MTH 113 , MTH 110P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

FYI 100 - First-Year Inquiry

Course Units: 1.0 First-Year Inquiry engages students in the exploration of ideas and diverse perspectives through critical reading, thinking, and writing.

- Introduction to Computer Science
- Elective*

Sophomore Year

CEE 201 - Mechanics 1

Course Units: 1 Analysis of forces acting on particles and rigid bodies in static equilibrium; equivalent systems of forces; friction; centroids and moments of inertia; introduction to energy methods. **Prerequisite(s):** PHY 120 , MTH 110 (or equivalent)

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

CHM 101 - Introductory Chemistry 1

Course Units: 1.0 This is an introductory course that focuses on atomic and molecular structure, chemical bonding, stoichiometry, aqueous chemical reactions, and the properties of gases, liquids, solids and solutions. **Prerequisite(s):** Not open to students who have scored 4 or 5 on the AP Chemistry Exam or who have completed CHM 110H . All students who wish to enroll in an introductory chemistry course must take a placement examination to determine the appropriate course. See Course Selection Guidelines for more information on placement. **Corequisite(s):** CHM 101L **CC:** SCLB **Lecture/Lab Hours** Three lab hours/week,6/10 weeks. **ISP:** ENS

CEE 212 - Mechanics 2

Course Units: 1 An introduction to kinematics of 3-D motion of rigid bodies, momentum principles for rigid bodies, variational formulation, stability of motion, vibration analysis, and continuous systems. **Prerequisite(s):** CEE 201 , MTH 115 or IMP 121

CEE 222 - Structural Materials w/Lab

Course Units: 1 This course develops an understanding of the natural characteristics, methods of manufacturing, structural design of sections, construction, and testing of civil engineering materials. The methods of testing are those standardized by the American Society for Testing and Materials (ASTM). Basic civil engineering materials covered in this course are aggregates, masonry, wood, Portland cement concrete, and asphalt. Professional design procedures recommended by the American Concrete Institute (ACI), the Masonry Society, and the Asphalt Institute (AI) will be used. **Prerequisite(s):** CHM 101

CEE 244 - Mechanics of Materials w/Lab

Course Units: 1 This course is a basic engineering course in applied mechanics that deals with the behavior of solid bodies subjected to various types of loading. Solid bodies considered in this course include axially loaded members, shafts in torsion, thin shells, beams, and columns, as well as structures that are assemblies of these components. The objectives of strength of materials analysis are the determination of the stresses, strains, and displacements, produced by the loads. Knowing these quantities for all values of load up to the failure load gives a complete picture of the behavior of the body. **Prerequisite(s):** CEE 201

CEE 260 - Thermo-Fluid w/Lab

Course Units: 1

Thermal-Fluid Systems is an integrated study of fundamental topics in thermodynamics, fluid statics and mechanics. The course develops the conservation principles for mass, energy, and linear momentum for control volume analysis as well as the 2nd Law of Thermodynamics. Dimensional analysis principles are developed and applied to incompressible flow in pipes, open channel flow, power generation systems, and air-conditioning focusing on the control volume approach. **Prerequisite(s):** CEE 201 , MTH 115 or IMP 121

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

MTH 130 - Ordinary Differential Equations

Course Units: 1.0 Topics include first and second-order differential equations and first-order systems, including analytic, geometric, and numerical techniques, classification of first-order linear systems by eigenvalues, forcing and resonance, and the Laplace transform. Applications include but are not limited to population models, RC circuits, and damped and undamped harmonic oscillators. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 **Note:** Not open to students who have passed MTH 234 . **CC:** GDQR

- Elective*

Junior Year

CEE 203 - Probability & Statistics

Course Units: 1 An introductory calculus-based statistics class for engineers covers topics in data collection, probability, continuous and discrete probability distributions, data collection and presentation, statistical inference, confidence limits, uncertainty analysis, tolerance intervals, analysis of variance, least squares regression, and an introduction to design of experiments. **Prerequisite(s):** MTH 115

CEE 240 - Surveying

Course Units: 1 Students will be taught surveying theory and the use of levels, theodolites, microstations, and distance measuring devices. They will collect, analyze, and assemble data into a plan. **Prerequisite(s):** CEE 101

CEE 301 - Engineering Comp. Modeling

Course Units: 1 Basic programming concepts introduced in CS10X are expanded to investigate computational solutions to engineering problems. A progression of numerical solutions are investigated with student written codes and a gradual progression of implementing library software. Topics include solution techniques to 1-D nonlinear equations, linear systems of equations and nonlinear systems of equations. Interpolation and curve fitting techniques are developed using engineering data. Finite difference integration and differentiation are introduced with a natural progression to solving 1-D, first order differential equations using Euler, Heun, and Runge Kutta algorithms. Higher order differential equations are analyzed using reduction of order. **Prerequisite(s):** CSC 10X

CEE 310 - Fundamental Theory of Structure

Course Units: 1 Structural analysis of determinate and indeterminate trusses, beams, and frames including reactions, axial forces, shear, and moments. Deflections estimated by moment area, conjugate beam, and virtual work methods. Influence lines, compatibility, slope deflection, and moment distribution methods are covered. Students must complete computer analysis and design projects **Prerequisite(s):** CEE 244

CEE 330 - Fund. of Transportation Eng.

Course Units: 1 An overview of transportation systems and theory. The course will introduce the field of transportation engineering, traffic operations and safety, scheduling, vehicle motion and flow, capacity and level of service, transportation planning, highway drainage, and terminal design. **Prerequisite(s):** CEE 203

- Engineering Elective 1
- Elective (2)*

Senior Year

CEE 340 - Construction Management

Course Units: 1 Developing a "life cycle" viewpoint in discussing the participants, the processes, and techniques of project management for construction. Topics include an introduction to bid packages, contracts, planning, scheduling, and estimation; orthographic and isometric drawings, dimensioning, auxiliary views, sectioning, and tolerances. Preparation of working drawings and solution of drafting problems in civil engineering related areas such as drawings of steel structures, concrete structures, and foundation layouts. Computer aided graphical representation and data analysis using two and three dimensional charts and plots. **Prerequisite(s):** CEE 101 , CEE 3XX

CEE 491 - Capstone Design 1

Course Units: 1 In this first term of the two term design course sequence students work in teams to research, ideate, and design potential solutions to open-ended projects. The first term of this design course will focus on professional practice, effective teaming and communication, and the beginning phases of the design process including but not limited to exploratory brainstorming, relevant documentation and regulations, site planning, and sustainability in design. The term will culminate with a presentation and written report detailing design assumptions, site and project constraints, case studies, and alternatives considered. **Prerequisite(s):** CEE 440 or any CEE 4XX

CEE 492 - Capstone Design 2

Course Units: 1 In this second term of the two term design course sequence students work in teams to select, design, prototype (if appropriate), and effectively present solutions to open-ended projects. The second term focuses on additional development of teaming and communication skills, discussion of professional ethics and licensure, design selection, relevant regulatory documents, and the detailed design needed for Civil and Environmental Engineering designs. Teams will create presentations and written reports that cover the execution of the selected design in detail including technical calculations and drawings, cost, safety, design/construction schedule and feasibility.
Prerequisite(s): CEE 491

- Engineering Elective 2
- Engineering Elective 3
- Engineering Elective 4
- Electives (4)*

*Electives should be chosen to meet the remaining Complex Questions: Global Challenges & Social Justice requirements as well as the student's educational goals which may included double majors or minors. Students should work with their academic adviser to develop an appropriate plan on study.
** The Fall term of the third year is the most common term for going on a full term abroad.

Classics

Chair: Professor H-F. Mueller
Faculty: Professors T. Gazzarri (on leave Spring 2025), S. Raucci; Senior Lecturer A. Commito; Assistant Professor G. Callaghan
Staff: L. Pelish (Administrative Assistant)

Classical Civilization Minor

Requirements for the Minor in Classical Civilization:

Six courses in Classics; Greek, Latin, and Biblical Hebrew language courses may be counted.

Classics (ID), B.A.

Requirements for Interdepartmental Major:

At least eight courses in the department, including at least four courses in one of the ancient languages. All majors must have their program approved by the chair.

Requirements for Honors in Classics:

To be eligible for departmental honors, the student must fulfill the following requirements:

1. A minimum index of 3.35 in departmental courses; completion of one language course at the 230-level or higher with a grade of "B plus" or better.

2. The student must achieve a grade of at least "A minus" on the senior thesis and present a distinctive performance in an oral examination based on the senior thesis. In addition, the student must satisfy College requirements for departmental honors.

Course Selection Guidelines

Course Numbering: Courses in ancient history, classical literature in translation, and ancient civilization have the prefix "CLS." These courses, including all reading assignments, are conducted entirely in English, and have no pre-requisites. These courses serve as excellent options for students interested in exploring the ancient world, satisfying Common Curriculum (CC) requirements (HUL, LCC, WAC, JCHF etc.), or building minors, and majors.

Language Placement: Language courses have their own prefixes: Greek: GRK; and Latin: LAT. Because secondary programs vary, the department is happy to assist students find the proper course level. The department grants AP Latin credit if the student has scored a "4" or better. This credit may be counted toward the major or minor. We also consider IB and other transfer credits on a case-by-case basis.

Classics, B.A.

Requirements for the Major:

At least 12 courses in the department, consisting of:

- At least four courses in one ancient language (Greek, Latin, or Biblical Hebrew).
- Six to seven additional courses, which, depending on track, may be in Classics, Greek, Latin, and/or Biblical Hebrew. (Students who opt for a two-term senior thesis take 6 additional courses; students who opt for a one-term senior project take 7 additional courses.)
- Either a senior project (1-term) or a senior thesis (2-terms). Both the project and thesis require a public performance or an oral examination.

Students are encouraged to study more than one ancient language. Students will, in consultation with the chair, choose their area of focus or track (e.g. ancient civilization, ancient history, ancient religion, classical archaeology, Greek, Latin, etc.). Students who intend to do graduate work in Classics should also consult the department chair about additional requirements for advanced study

Requirements for Honors in Classics:

To be eligible for departmental honors, the student must fulfill the following requirements:

1. A minimum index of 3.35 in departmental courses; completion of one language course at the 230-level or higher with a grade of "B plus" or better.

2. The student must achieve a grade of at least "A minus" on the senior thesis and present a distinctive performance in an oral examination based on the senior thesis. In addition, the student must satisfy College requirements for departmental honors.

Course Selection Guidelines

Course Numbering: Courses in ancient history, classical literature in translation, and ancient civilization have the prefix "CLS." These courses, including all reading assignments, are conducted entirely in English, and have no pre-requisites. These courses serve as excellent options for students interested in exploring the ancient world, satisfying Common Curriculum (CC) requirements (HUL, LCC, WAC, JCHF etc.), or building minors, and majors.

Language Placement: Language courses have their own prefixes: Greek: GRK; and Latin: LAT. Because secondary programs vary, the department is happy to assist students find the proper course level. The department grants AP Latin credit if the student has scored a "4" or better. This credit may be counted toward the major or minor. We also consider IB and other transfer credits on a case-by-case basis.

Greek or Latin Minor

Requirements for the Minor in Greek or Latin:

Five courses in either Greek or Latin and an additional course in history, which should be CLS 121 (History of Greece) or the study of a Greek historian in Greek, if the minor is in Greek, or CLS 126 (Roman Republic), CLS 129 (Roman Empire), or the study of a Latin historian in Latin, if the minor is in Latin.

Computer Engineering

Department Chair: Associate Professor J. Currey, **Associate Chair:** Associate Professor T. Buma
Faculty: Professors L.Dosiek, C. Traver; Associate Professors T. Buma, S. Cotter, H. Hanson; Assistant Professors M. Okwori, C. Pappu; Visiting Assistant Professor M. Momota; Senior Lecturer J. Hedrick
Staff: G. Davison (Engineering Assistant), L. Galeo (Administrative Assistant)

The Computer Engineering program provides students with a solid basis in computer engineering and its underlying mathematics and science within the framework of a liberal arts education. We prepare students for immediate professional employment, graduate study, and entry into related professions. We believe that the rigor and depth of a computer engineering education combined with a broad study of the liberal arts provides an excellent background for students who wish to enter professions such as medicine, law, and business administration as well as engineering itself. Through our study abroad opportunities, our emphasis on undergraduate research, and the personal attention that we give to each student, we educate well-rounded members of society who are prepared to excel in an increasingly multicultural and technological world.

The Computer Engineering program is offered by the Electrical, Computer, and Biomedical Engineering Department, with significant parts of the curriculum supported by the Computer Science Department. The Computer Engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Educational objectives and student outcomes are listed on the department website.

Computer Engineering Approved Courses

Computer Science Courses

CSC 033 - Programming Practicum: Introduction to R

Course Units: 0.0 An introduction to the programming language R and how it can be used for statistical analysis and visualization of data. Students will learn how to write basic R programs that can read, write, and manipulate data. They will make use of R functions for executing common statistical analysis and learn how to display the results using graphs and charts. Through a series of projects, students will get experience with writing their own functions, learn how to make use of R documentation and how to extend their own knowledge of the language. A student can receive a pass/fail credit equivalent to one elective course, if they receive a passing grade in this course as well as in two terms (normally in a row) of the CS practicum course (CSC 281, 282).

CSC 055 - Working with the Web

Course Units: 1.0 Design, writing, and publishing of WWW pages; creation of graphical images; study of the underlying Web technologies such as communication protocols, digital encoding and compression; programming of Web pages. **CC:** SET **ISP:** STS

CSC 080 - History of Computing

Course Units: 1.0 A survey of tools for computation, from number systems and the abacus to contemporary digital computers. The course focuses on the development of modern electronic computers from ENIAC to the present. Study of hardware, software, and the societal effects of computing. **Cross-Listed:** HST 292 **CC:** SET **ISP:** STS

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 104 - Robots Rule! Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a robotics theme. Introduces students to algorithms, basic data structures, and programming techniques. Students will build and program robots, exploring mobility, navigation, sensing, and inter-robot communication. Additional class topics include: history of robotics, social and ethical issues, emotionally intelligent behavior and other current topics in robotics. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 105 - Game Development: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a computer games theme. Introduces students to algorithms, basic data structures, and programming techniques. Computer game development is used as an example application area and students implement their own games throughout the course. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area, focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 108 - Scientific Computing: Introduction to Computer Science

Course Units: 1.0 Computers are used as tools in analyzing and solving scientific problems as well as being embedded in many applications and experimental equipment used by today's scientists. This course is designed to introduce students to computer programming and problem solving through the use of Python. Python is a language commonly used by the scientific community, and we will focus on using it to address scientific problems, using extensions that facilitate scientific computing. CC: QMR, SET Note: A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 112 - The Processed Pixel

Course Units: 1.0 **Cross-Listed:** AVA 270 **CC:** SET, HUM **Note:** This course does not count as an Introduction to Computer Science the way CSC 103 , CSC 104 , CSC 105 , CSC 106 , and CSC 107 and CSC 108 do.

CSC 118 - Introduction to Computer and Logic Design

Course Units: 1.0 Fundamental material in the area of digital logic circuit analysis and synthesis, and computer organization. The components of digital computers are studied at the gate level, the function level, and the machine organization level. Weekly laboratory exercises are required. **Cross-Listed:** ECE 118 **Corequisite(s):** CSC 118L **CC:** SET **Note:** This course does not count as an Introduction to Computer Science the way CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 and CSC 108 do.

CSC 120 - Programming on Purpose

Course Units: 1.0 An introduction to software design principles aimed at making software more efficient, robust, readable, maintainable, and reusable. An introduction to object-oriented programming and design, including classes, objects, methods, and sub-typing. **Prerequisite(s):** C- or better in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 or CSC 108 . A grade of C- or better is required to continue with any course that requires CSC 120 as a prerequisite. **CC:** SET

CSC 151 - Data Structures

Course Units: 1.0 Basic concepts of data organization and abstraction, software design, stacks, queues, trees, and their implementation with linked structures. Programming in Java. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 120 . MTH 199 can be substituted for MTH 197 **Prereq/Corequisite(s):** A grade of C- or better is required in order to continue with any course that requires CSC 151 as a prerequisite.

CSC 206 - Text Analytics

Course Units: 1.0 This course introduces computational techniques for extracting information from unstructured text. This includes reading in different types of text, preparing text for further processing, summarizing and visualizing basic descriptive statistics, as well as applications, such as sentiment analysis, information retrieval, information extraction, summarization, and topic modeling. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 **CC:** SET

CSC 218 - Embedded Mirocontroller Projects

Course Units: 1.0 **CC:** SET

CSC 233 - Intro to Data Analytics

Course Units: 1.0

Data analytics, the process of analyzing, revealing, interpreting, and visualizing information concealed inside big data, is revolutionizing daily life, as used by companies such as Amazon, Google and Facebook, for the diagnosis of medical conditions or the way medical claims are handled, for investment strategies and real estate pricing, and in academia, with the analysis of historical texts, understanding the deliberations of the Supreme Court or the European Commission, or processing large amounts of genomics data.
In this class, students will be introduced to techniques to acquire data from the web, manipulate and pre-process data into manageable forms, perform analyses from a description and predictive standpoint, and learn the basics of visualizing the results, all with a focus on story telling through data, enhancing data literacy. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 . **CC:** SET

CSC 234 - Data Visualization

Course Units: 1.0 Data has a story which has to be told! Data visualization is all around us, in print and in electronic media. Some of it is accurate and effective, while some is extremely unclear, confusing, or misleading. In this course we will study various approaches to information visualization and associated data analysis techniques. How do we take a lot of data, or very complex data, and present it in ways that allow it to communicate information clearly and effectively? The course will explore applications from science, medicine, social science, and humanities.
Prerequisite(s): C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 .
CC: SET

CSC 235 - Modeling & Simulation

Course Units: 1.0 This course will study modeling and simulation as they occur in and apply to a number of different disciplines. It will cover system dynamics models which address major systems that change with time, and cellular automaton simulations that look more narrowly at individuals affecting individuals. Other topics will include rate of change, errors, simulation techniques, empirical modeling, and an introduction to high performance computing.
Prerequisite(s): C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 **CC:** SET

CSC 236 - Computer Network Protocols

Course Units: 1.0 Design, analysis, and operation of communication protocols for computer networks; TCP/IP, addressing, switching, routing, congestion control, application protocols. **Cross-Listed:** ECE 336

CSC 237 - Data Communications and Networks

Course Units: 1.0 **Cross-Listed:** ECE 337

CSC 240 - Web Programming

Course Units: 1.0 This course addresses the standards in programming applications for the Web. It covers the client-side technologies HTML, CSS, and JavaScript as well as server-side technologies PHP and MySQL. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 **CC:** SET **ISP:** STS

CSC 243 - Bioinformatics: Information Technology in the Life Sciences

Course Units: 1.0 Biology and computer science students will gain a working knowledge of the basic principles of the others' discipline, and will collaborate together on bioinformatics projects. Topics include pairwise and multiple sequence alignments, phylogenetic trees, gene expression analysis, and protein structure prediction. Additional topics will be presented by invited speakers. **Cross-Listed:** BIO 243 **Prerequisite(s):** BIO-205 **or** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 ,or CSC 108 . **CC:** SET **ISP:** STS

CSC 245 - The Computer Science of Computer Games

Course Units: 1.0 This course surveys the field of computer science from the perspective of computer games. Topics explored include: rendering of graphics to a screen, implementation of realistic simulation, use of artificial intelligence in games, handling user input, game physics, collaborative development. Final course project is a complete computer game. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 . **CC:** SET **ISP:** STS

CSC 250 - Algorithm Design and Analysis

Course Units: 1.0 Fundamental algorithms used in a variety of applications. Includes algorithms on list processing, string processing, geometric algorithms, and graph algorithms. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197. Note: A grade of C- or better is required in order to continue with any course that requires CSC-250 as a prerequisite. **CC:** WAC

CSC 260 - Large-Scale Software Development

Course Units: 1.0 Strategies for the systematic design, implementation, and testing of large software systems. Design notations, tools, and techniques. Design patterns and implementation idioms. Implementation, debugging, and testing. Includes team and individual software development projects. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 270 - Computer Organization

Course Units: 1.0 The architecture and operation of the digital computer. CPU design, input/output, computer arithmetic, assembly language. **Prerequisite(s):** C- or higher in CSC 120 **Corequisite(s):** CSC 270L **Lecture/Lab Hours** Includes a laboratory.

CSC 281 - Computer Science Practicum 1

Course Units: 0.0 Under the supervision of a CSC faculty member, students may participate in undergraduate research or a design project. To receive pass/fail credit equivalent to one elective course, a student must receive a passing grade in three terms (normally in a row) of the practicum course. Up to two credits may be earned in this way. **Prerequisite(s):** Permission of the faculty supervisor and the department chair.

CSC 282 - Computer Science Practicum 2

Course Units: 0.0 Under the supervision of a CSC faculty member, students may participate in undergraduate research or a design project. To receive pass/fail credit equivalent to one elective course, a student must receive a passing grade in three terms (normally in a row) of the practicum course. Up to two credits may be earned in this way. **Prerequisite(s):** Permission of the faculty supervisor and the department chair.

CSC 283 - Computer Science Practicum 3

Course Units: 0.0 Under the supervision of a CSC faculty member, students may participate in undergraduate research or a design project. To receive pass/fail credit equivalent to one elective course, a student must receive a passing grade in three terms (normally in a row) of the practicum course. Up to two credits may be earned in this way. **Prerequisite(s):** Permission of the faculty supervisor and the department chair.

CSC 290 - Computer Science Independent Study 1

Course Units: 1.0 Independent work on a CS topic of interest under the supervision of a CS faculty member. This course should be used for work that the supervising faculty member deems equivalent to a 100-level or 200-level course. For higher level course equivalences, use CSC 490 . **Prerequisite(s):** Permission of the faculty supervisor and the department chair.

CSC 291 - Computer Science Independent Study 2

Course Units: 1.0 Independent work on a CS topic of interest under the supervision of a CS faculty member. This course should be used for work that the supervising faculty member deems equivalent to a 100-level or 200-level course. For higher level course equivalences, use CSC 490 . **Prerequisite(s):** Permission of the faculty supervisor and the department chair.

CSC 292 - Computer Science Independent Study 3

Course Units: 1.0 Independent work on a CS topic of interest under the supervision of a CS faculty member. This course should be used for work that the supervising faculty member deems equivalent to a 100-level or 200-level course. For higher level course equivalences, use CSC 490 . **Prerequisite(s):** Permission of the faculty supervisor and the department chair.

CSC 295H - Computer Science Honors Project 1

Course Units: 0.0

CSC 296H - Computer Science Honors Project 2

Course Units: 1.0

CSC 318 - Digital Design

Course Units: 1.0 **Cross-Listed:** ECE 318 **Corequisite(s):** CSC 318L

CSC 320 - Artificial Intelligence

Course Units: 1.0 Fundamental concepts used in creating "intelligent" computer systems; semantic representation, logical deduction, natural language processing, and game playing; expert systems, knowledge-based systems, and elementary robotics. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . Recommended: CSC 250 . MTH 199 can be substituted for MTH 197

CSC 321 - Data Mining and Machine Learning

Course Units: 1.0 Introduces Data Mining, where previously unknown and potentially useful information is automatically extracted from data sources, using regularities or patterns of implicit information. Such patterns can be

used to make predictions over future data, and be used to explain and understand the nature of that data. Machine Learning is one mechanism by which data mining is achieved. It is used to discover and extract information from raw data. This course will cover tools and techniques of machine learning that are used in practical data mining. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 325 - Robotics

Course Units: 1.0 The course will cover basic algorithms necessary for motor control. Building on these methods we will discuss higher level navigation for mobile robots, as well as the sensing necessary for localization of the robot in its environment. Finally, we will also examine the challenges of motion planning for jointed robots with many degrees of freedom. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 329 - Neural Networks

Course Units: 1.0 **(TBD: Staff) Cross-Listed:** ECE 329

CSC 385 - Computer Graphics

Course Units: 1.0 Implementation and use of algorithms for computer graphics. Rendering and representation of 3D objects. Lighting, shading and texture mapping surfaces of 3D objects. Programming interactive graphics applications. Constructing 3D models of real-world objects. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197 **ISP:** FLM

CSC 483 - Selected Topics in Computer Science

Course Units: 1.0 **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 and CSC 250 . MTH 199 can be substituted for MTH 197 **CC:** SET **Note:** Course can be repeated for credit under different topics. Consult with department chair for more information.

CSC 490 - Computer Science Independent Study 1

Course Units: 1.0 This course should be used for work that the supervising faculty member deems equivalent to a 300-level or 400-level course. For lower level course equivalences, use CSC 290 **Prerequisite(s):** Permission of faculty supervisor and the department chair.

CSC 491 - Computer Science Independent Study 2

Course Units: 1.0 This course should be used for work that the supervising faculty member deems equivalent to a 300-level or 400-level course. For lower level course equivalences, use CSC 290 **Prerequisite(s):** Permission of faculty supervisor and the department chair.

CSC 492 - Computer Science Independent Study 3

Course Units: 1.0 This course should be used for work that the supervising faculty member deems equivalent to a 300-level or 400-level course. For lower level course equivalences, use CSC 290 **Prerequisite(s):** Permission of faculty supervisor and the department chair.

CSC 497 - Computer Science Capstone Seminar

Course Units: 0.5 Development of the skills necessary for independent research: Reading scholarly works, designing experiments and empirically evaluating their results. Development of a comprehensive senior capstone project proposal. Investigation of professional ethics, skills and responsibilities. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197 **Note:** Normally taken in Spring of the Junior year.

CSC 498 - Computer Science Capstone Project 1

Course Units: 0.75 Design, implementation, and evaluation of the capstone project. **Prerequisite(s):** CSC 497 **CC:** WS **Note:** Normally taken during the Senior year.

CSC 499 - Computer Science Capstone Project 2

Course Units: 0.75 Design, implementation, and evaluation of the capstone project. **Prerequisite(s):** CSC 498 **CC:** WS **Note:** Normally taken during the Senior year.

Electrical and Computer Engineering Courses

ECE 101 - The Joy of Electronics

Course Units: 1.0 Introduction to the tools, skills, and principles of electrical and computer engineering. Emphasis is placed on developing an intuitive understanding while learning quantitative methods to design, test, and analyze electronics. Test and measurement tools include oscilloscopes, multimeters, and function generators. Circuit construction techniques include breadboarding and soldering as well as computer software to simulate circuits. Principles such as power, frequency, and modulation are taught through analog and digital electronics projects. Hands-on projects include an audio amplifier, crystal radio receiver, digital clock, and a microcontroller-operated robotic arm. **CC:** SET **Note:** Not open to students who have taken ECE 222 or ECE 225

ECE 102 - Intro to Audio Electronics

Course Units: 1 In this course students will learn about audio electronics by constructing projects such as an audio amplifier, a smart sound generator, and analog and digital filters to remove unwanted noise or interference. In addition to engaging with the engineering design process, students will reflect upon how audio engineering has and continues to impact society through the creation and manipulation of sound. **CC:** SET, JETS **Note:** Not open to students who have taken ECE 218 , ECE 222 or ECE 225

ECE 118 - Introduction to Computer and Logic Design

Course Units: 1.0 Fundamental material in the area of digital logic circuit analysis and synthesis, and computer organization. The components of digital computers are studied at the gate level, the function level, and the machine organization level. Weekly laboratory exercises are required. **Cross-Listed:** CSC 118 **Corequisite(s):** ECE 118L **CC:** SET

ECE 218 - Embedded Microcontroller Projects

Course Units: 1.0 Focuses on the design and implementation of microcontroller systems. Topics include microcontroller architecture, interfacing, programming for control applications, multitasking, and tools used in embedded system design. The course includes a weekly project-based laboratory. **Prerequisite(s):** ECE 118 and one course from the following: CSC 103, CSC 104, CSC 105, CSC 106, CSC 107, or CSC 108 **Corequisite(s):** ECE 218L **CC:** SET

ECE 222 - Introduction to Circuits and Electronics

Course Units: 1.0 Electrical quantities, circuit principles, analysis and response of basic circuits, semiconductor physics, diodes, transistors, and operational amplifiers. Includes a weekly lab. **Prerequisite(s):** PHY 121 or IMP 121 **Corequisite(s):** ECE 222L **Prereq/Corequisite(s):** Not open to Electrical, Computer, or Biomedical Engineering majors, or to students who have taken ECE 225

ECE 225 - Electric Circuits

Course Units: 1.0 Basic electrical circuit concepts and devices such as Ohm's law, Kirchhoff's laws, Thevenin and Norton equivalents, operational amplifiers, analysis methods, capacitors, inductors, ideal transformers, phasors, AC steady state analysis, complex power, frequency response and filters. Includes a weekly lab. Not open to Mechanical Engineering major **Cross-Listed:** BME 225 **Prerequisite(s):** MTH 112 or MTH 113 **Corequisite(s):** ECE 225L

ECE 240 - Circuits and Systems

Course Units: 1.0 Transient analysis of RLC circuits; modeling of circuits using differential equations; system models and properties; Laplace transforms applied to circuit and system design and analysis; system functions; complex frequency; poles and zeros; stability; frequency response; filter design. Includes a weekly lab. Not open to Mechanical Engineering majors **Cross-Listed:** BME 240 **Prerequisite(s):** ECE 225 or BME 225 **Corequisite(s):** ECE 240L **CC:** WAC

ECE 241 - Discrete Systems

Course Units: 1.0 Discrete signals and systems; classification and properties of systems; difference equations; Z-transform; Fourier series, Fourier transforms, the DFT and FFT; filters and filter design; A/D and D/A converters; applications to audio signal processing. Includes a weekly lab. **Cross-Listed:** BME 241 **Prerequisite(s):** ECE 240 or BME 240 **Corequisite(s):** ECE 241L **CC:** WAC **ISP:** FLM

ECE 248 - Introduction to Semiconductor Devices and Circuits

Course Units: 1.0 Semiconductors: theory of operation of diodes and transistors; circuit models; basic electronic circuits and amplifiers: transfer characteristics and inverters. Includes a weekly lab. **Prerequisite(s):** ECE 225 or BME 225 **Corequisite(s):** ECE 248L

ECE 281 - Electrical and Computer Engineering Practicum 1

Course Units: 0.0 Under the supervision of an ECE faculty member, students may participate in undergraduate research or a design project. To receive pass/fail credit equivalent to one free elective course, a student must receive a passing grade in three terms of the practicum course. Up to two credits may be earned in this way. **Prerequisite(s):** Permission of the faculty supervisor and the department chair.

ECE 282 - Electrical and Computer Engineering Practicum 2

Course Units: 0.0 Under the supervision of an ECE faculty member, students may participate in undergraduate research or a design project. To receive pass/fail credit equivalent to one free elective course, a student must receive a passing grade in three terms of the practicum course. Up to two credits may be earned in this way. **Prerequisite(s):** Permission of the faculty supervisor and the department chair.

ECE 283 - Electrical and Computer Engineering Practicum 3

Course Units: 1.0 Under the supervision of an ECE faculty member, students may participate in undergraduate research or a design project. To receive pass/fail credit equivalent to one free elective course, a student must receive a passing grade in three terms of the practicum course. Up to two credits may be earned in this way.

ECE 295H - Electrical and Computer Engineering Honors Independent Project 1

Course Units: 0.0 Sophomore project in Electrical and Computer Engineering for students participating in a scholars program. **Prerequisite(s):** Permission of the instructor.

ECE 296H - Electrical and Computer Engineering Honors Independent Project 2

Course Units: 1.0 Sophomore project in Electrical and Computer Engineering for students participating in a scholars program. **Prerequisite(s):** Permission of the instructor.

ECE 310 - Electronic Devices

Course Units: 1.0 Introduction to semiconductors and solid-state devices. Electrons and holes, energy bands, carrier transport and dynamics, recombination and generation; p-n junctions and diodes; bipolar junction transistors; field-effect transistors; and optoelectronic devices (light-emitting diodes, photodiodes, and solar cells). **Prerequisite(s):** ECE 248 or permission of the instructor

ECE 318 - Digital Design

Course Units: 1.0 The design of digital hardware systems at the module level using modern approaches. Datapath and control unit design, hardware description languages, programmable device implementations. Weekly laboratory exercises using electronic design automation tools and a design project are required. **Cross-Listed:** CSC 318 **Prerequisite(s):** ECE 118 **Corequisite(s):** ECE 318L

ECE 325 - Acoustics of Speech Communication

Course Units: 1.0 Acoustics, circuit theory, and signal processing applied to analysis of speech signals; Physiology of speech production; Articulatory phonetics; Acoustical and articulatory description of phonetic features and of prosodic aspects of speech; Perception of speech; Models of speech production and planning; Some applications to recognition and generation of speech by machine, and to the study of speech disorders. **Prerequisite(s):** ECE 241 or BME 241

ECE 328 - Fundamental Internet of Things

Course Units: 1 This course will explore the fundamental concepts of Internet of Things (IoT) and technologies that enable the connection of various useful electronic devices (things) on the internet. Topics will include IoT evolution, architecture and reference models, sensors and actuators, communication technologies (RFID, NFC, Bluetooth Low Energy, Zigbee, 6LowPAN, LoRa, and NB-IoT), protocols (MQTT and CoAP), and the design of simple IoT applications using hands-on projects. **Prerequisite(s):** ECE 218

ECE 329 - Neural Networks

Course Units: 1.0 Topics include the biological basic of artificial neural networks, neuron models and architectures, backpropagation, and deep learning models. **Cross-Listed:** CSC 329 **Prerequisite(s):** CSC 151 or CSC 100-level and ECE 240 or permission of the instructor.

ECE 336 - Computer Network Protocols

Course Units: 1.0 Design, analysis, and operation of communication protocols for computer networks; TCP/IP, addressing, switching, routing, congestion control, application protocols. **Cross-Listed:** CSC 236 **Prerequisite(s):** CSC 100-level and either ECE 118 / CSC 118 or CSC 120

ECE 337 - Data Communications and Networks

Course Units: 1.0 An introduction to the physical and data link layers of data communication networks, including error detection, and local area networks. **Cross-Listed:** CSC 237 **Prerequisite(s):** CSC 100-level and ECE 118 / CSC 118 or CSC 120

ECE 341 - Energy Conversion

Course Units: 1.0 Theory of electromechanical energy conversion; characteristics of transformers and DC induction; and synchronous machines. **Prerequisite(s):** ECE 225 or BME 225

ECE 342 - Power Electronics

Course Units: 1.0 Rectifying devices and rectifier circuits: device characteristics, waveforms, harmonic content filtering. Controlled rectifiers (thyristors, triacs): device characteristics, single phase and multiphase systems. Snubber circuits and divide limitations. DC-DC converters: design, application, topologies. Energy storage element selection and design: capacitors and inductors. **Prerequisite(s):** ECE 248, ECE 350

ECE 343 - Introduction to Electromagnetic Engineering

Course Units: 1.0 Traveling waves: transmission lines; electrostatics; magnetostatics; applications to engineering problems; solutions by analytical and numerical techniques. **Prerequisite(s):** ECE 240, (MTH 117 and PHY 121) or IMP 120 **Corequisite(s):** ECE 343L **Lecture/Lab Hours** One lab per week.

ECE 344 - Electric Machines and Drives

Course Units: 1.0 Introduction to electric drives; understanding mechanical system requirements; DC motors and variable speed drives; current, speed, and position controllers; induction machine variable speed drives; space vectors; permanent magnet AC and brushless DC motors; efficiency considerations and applications to alternative energy systems. **Prerequisite(s):** ECE 240

ECE 346 - Intro to Power Engineering

Course Units: 1 Fundamentals of power engineering; energy sources; transmission lines; power flow; transformers; power electronics and HVDC; distribution systems; synchronous generators; stability; economic dispatch; protection. **Prerequisite(s):** ECE 225 or ECE 222

ECE 347 - Image Processing

Course Units: 1.0 The course covers the basic operations performed on digital images. These include digitization, image enhancement and restoration, color image processing, and image compression using the discrete cosine transform and wavelets. **Prerequisite(s):** ECE 241 or BME 241 **ISP:** FLM

ECE 350 - Communication Systems

Course Units: 1.0 Frequency domain analysis, signal space representations, and their application to wireless communications; quality measures; performance in the presence of noise. Includes a weekly lab. **Prerequisite(s):** ECE 241 **Corequisite(s):** ECE 350L

ECE 351 - Probability and Digital Communications

Course Units: 1.0 An introduction to probability with an emphasis on applications in digital communications. Digital signaling, coding, probability of error, matched filters, optimum receiver design, source entropy, channel capacity. **Prerequisite(s):** ECE 118, ECE 240

ECE 354 - VLSI System Design

Course Units: 1.0 Design of very large-scale integrated systems including standard CMOS and more advanced and emerging technologies in nanoelectronics. Design from logic to physical levels and manufacturing processes. System-on-chip technologies and applications. **Cross-Listed:** CSC 354 **Prerequisite(s):** ECE 118 and (ECE 225 or BME 225 or ECE 222) **Corequisite(s):** ECE 354L **Lecture/Lab Hours** Weekly lab

ECE 363 - Analysis and Design of Electronic Circuits

Course Units: 1.0 Multiple-stage amplifiers; Differential amplifiers; Frequency response of amplifiers; Feedback amplifier; Stability of electronic circuits; Analysis and design of operational amplifiers. **Prerequisite(s):** ECE 248 **Corequisite(s):** ECE 363L **Lecture/Lab Hours** Weekly lab

ECE 366 - Control Systems

Course Units: 1.0 Modeling of control systems by block diagrams and flow graphs. Analysis of control systems response, error and stability, Root-Locus method, and frequency domain methods (Nyquist, Bode, and Nichols). **Prerequisite(s):** ECE 240 **Corequisite(s):** ECE 366L **Lecture/Lab Hours** One lab per week.

ECE 371 - High Resolution Radar

Course Units: 1.0 An introduction to the basic theory for design and analysis of radar systems; range equation; signal design and models; signal processing; high resolution imaging; range and Doppler information **Prerequisite(s):** ECE 241

ECE 375 - Chaotic Signals and Systems

Course Units: 1 Introducing the fundamental concepts and definitions of one-dimensional and two-dimensional maps, characterization of chaotic systems, strange attractors and fractals, bifurcation analysis, circuit implementation, and chaos synchronization. **Prerequisite(s):** ECE 241

ECE 386 - Biomedical Instrumentation

Course Units: 1.0 Introduction to the theory and application of instruments in medicine. Measurements of the major systems in the body are covered. A weekly laboratory provides an opportunity to perform measurements and use biomedical instruments. **Cross-Listed:** BME 386 **Prerequisite(s):** ECE 240 or BME 240 **Corequisite(s):** ECE 386L

ECE 420 - Introduction to State Space Analysis and Control

Course Units: 1.0 Formulations of state equations. State space representation of linear systems. Dynamic characteristics of linear systems. Eigenvalues and eigenvectors. Solution of state equations. Controllability and Observability. Pole placement. Linear observers. **Prerequisite(s):** ECE 366

ECE 463 - Fundamentals of Wireless Electronics

Course Units: 1.0 Review of phasor analysis; inductance and coupling networks; resonance; complex power and power transfer; transmission line theory and applications; introduction to matching network design. Includes a weekly studio/lab session. **Prerequisite(s):** ECE 241 **Corequisite(s):** ECE 463L

ECE 481 - Special Topics in Electrical and Computer Engineering

Course Units: 1.0 Topics chosen from the current literature according to faculty and student interest. Each of these special topics courses has variable content addressing specific current areas of interest to students. They will be offered whenever the need arises.

ECE 482 - Special Topics in Electrical and Computer Engineering

Course Units: 1.0 Topics chosen from the current literature according to faculty and student interest. Each of these special topics courses has variable content addressing specific current areas of interest to students. They will be offered whenever the need arises.

ECE 483 - Special Topics in Electrical and Computer Engineering

Course Units: 1.0 Topics chosen from the current literature according to faculty and student interest. Each of these special topics courses has variable content addressing specific current areas of interest to students. They will be offered whenever the need arises.

ECE 487 - Medical Imaging Systems

Course Units: 1.0 The basic physics, instrumentation, system design, and image reconstruction algorithms are covered for the following imaging modalities: ultrasound, radiography, x-ray computed tomography (CT), magnetic resonance imaging (MRI), planar scintigraphy, and positron emission tomography (PET). **Cross-Listed:** BME 487 **Prerequisite(s):** ECE 241

ECE 490 - Electrical and Computer Engineering Independent Study 1

Course Units: 1.0

ECE 491 - Electrical and Computer Engineering Independent Study 2

Course Units: 1.0

ECE 492 - Electrical and Computer Engineering Independent Study 3

Course Units: 1.0

ECE 493 - Electrical and Computer Engineering Independent Study 4

Course Units: 1.0

ECE 494 - Electrical and Computer Engineering Independent Study 5

Course Units: 1.0

ECE 495 - Electrical and Computer Engineering Independent Study 6

Course Units: 1.0

ECE 496 - Electrical and Computer Engineering Independent Study 7

Course Units: 1.0

ECE 497 - Electrical and Computer Engineering Capstone Design Project 1

Course Units: 0.5 Topics in the seminar include professional and ethical responsibilities; the historical and societal context of electrical and computer engineering; contemporary issues, and the specification, analysis, design, implementation, and testing phases of a design project. Research papers, project reports, and oral presentations are required.

ECE 498 - Electrical and Computer Engineering Capstone Design Project 2

Course Units: 0.5 The second term of the capstone design project. Students complete the design and begin the implementation of a system under the supervision of one or more faculty members. An oral presentation and design report are required. **CC:** WAC, WAC-R

ECE 499 - Electrical and Computer Engineering Capstone Design Project 3

Course Units: 1.0 Students complete the implementation, testing, and evaluation of a system under the supervision of one or more faculty members. A final presentation and design report are required. **CC:** WS

Computer Engineering Minor

Due to significant curricular overlap, Electrical Engineering and Computer Science majors are **not allowed to minor** in Computer Engineering.

Core Requirements

Take all of the following:

ECE 118 - Introduction to Computer and Logic Design

Course Units: 1.0 Fundamental material in the area of digital logic circuit analysis and synthesis, and computer organization. The components of digital computers are studied at the gate level, the function level, and the machine organization level. Weekly laboratory exercises are required. **Cross-Listed:** CSC 118 **Corequisite(s):** ECE 118L **CC:** SET

ECE 225 - Electric Circuits

Course Units: 1.0 Basic electrical circuit concepts and devices such as Ohm's law, Kirchhoff's laws, Thevenin and Norton equivalents, operational amplifiers, analysis methods, capacitors, inductors, ideal transformers, phasors, AC steady state analysis, complex power, frequency response and filters. Includes a weekly lab. Not open to Mechanical Engineering major **Cross-Listed:** BME 225 **Prerequisite(s):** MTH 112 or MTH 113 **Corequisite(s):** ECE 225L

CSC 120 - Programming on Purpose

Course Units: 1.0 An introduction to software design principles aimed at making software more efficient, robust, readable, maintainable, and reusable. An introduction to object-oriented programming and design, including classes, objects, methods, and sub-typing. **Prerequisite(s):** C- or better in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 or CSC 108 . A grade of C- or better is required to continue with any course that requires CSC 120 as a prerequisite. **CC:** SET

CSC 151 - Data Structures

Course Units: 1.0 Basic concepts of data organization and abstraction, software design, stacks, queues, trees, and their implementation with linked structures. Programming in Java. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 120 . MTH 199 can be substituted for MTH 197 **Prereq/Corequisite(s):** A grade of C- or better is required in order to continue with any course that requires CSC 151 as a prerequisite.

Additional ECE/CSC courses

Take two from the following:

ECE 218 - Embedded Microcontroller Projects

Course Units: 1.0 Focuses on the design and implementation of microcontroller systems. Topics include microcontroller architecture, interfacing, programming for control applications, multitasking, and tools used in embedded system design. The course includes a weekly project-based laboratory. **Prerequisite(s):** ECE 118 and one course from the following: CSC 103, CSC 104, CSC 105, CSC 106, CSC 107, or CSC 108 **Corequisite(s):** ECE 218L **CC:** SET

ECE 318 - Digital Design

Course Units: 1.0 The design of digital hardware systems at the module level using modern approaches. Datapath and control unit design, hardware description languages, programmable device implementations. Weekly laboratory exercises using electronic design automation tools and a design project are required. **Cross-Listed:** CSC 318 **Prerequisite(s):** ECE 118 **Corequisite(s):** ECE 318L

or

CSC 318 - Digital Design

Course Units: 1.0 **Cross-Listed:** ECE 318 **Corequisite(s):** CSC 318L

ECE 336 - Computer Network Protocols

Course Units: 1.0 Design, analysis, and operation of communication protocols for computer networks; TCP/IP, addressing, switching, routing, congestion control, application protocols. **Cross-Listed:** CSC 236 **Prerequisite(s):** CSC 100-level and either ECE 118 / CSC 118 or CSC 120

or

CSC 236 - Computer Network Protocols

Course Units: 1.0 Design, analysis, and operation of communication protocols for computer networks; TCP/IP, addressing, switching, routing, congestion control, application protocols. **Cross-Listed:** ECE 336

ECE 337 - Data Communications and Networks

Course Units: 1.0 An introduction to the physical and data link layers of data communication networks, including error detection, and local area networks. **Cross-Listed:** CSC 237 **Prerequisite(s):** CSC 100-level and ECE 118 / CSC 118 or CSC 120

or

CSC 237 - Data Communications and Networks

Course Units: 1.0 **Cross-Listed:** ECE 337

CSC 250 - Algorithm Design and Analysis

Course Units: 1.0 Fundamental algorithms used in a variety of applications. Includes algorithms on list processing, string processing, geometric algorithms, and graph algorithms. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197. Note: A grade of C- or better is required in order to continue with any course that requires CSC-250 as a prerequisite. **CC:** WAC

CSC 270 - Computer Organization

Course Units: 1.0 The architecture and operation of the digital computer. CPU design, input/output, computer arithmetic, assembly language. **Prerequisite(s):** C- or higher in CSC 120 **Corequisite(s):** CSC 270L **Lecture/Lab Hours** Includes a laboratory.

Computer Engineering, B.S.

Requirements for the Major:

A total of 40 courses including the following:

Math and Science:

Select One Calculus Sequence

Sequence One

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

Students considering the IMP-120 & IMP-121 sequence should consult with their advisor.

Sequence Two

MTH 110 - Calculus 1: Differential Calculus

Course Units: 1.0 Differential calculus of functions of a single variable. Limits, continuity, differentiation, computational aspects of Maclaurin and Taylor polynomials and series, and applications. **Note:** Not intended for students who have passed MTH 059 ,MTH 105 , MTH 113 , MTH 110P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

Sequence Three

MTH 105 - Differential Calculus with Precalculus

Course Units: 1.0 Differential calculus of functions of a single variable, supplemented with supporting precalculus. Limits, continuity, differentiation, and applications. **CC:** QMR **ISP:** ENS **Note:** Not intended for students with credits for MTH 059 ,MTH 110 , MTH 113 , MTH 110P or MTH 113P.

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

Additional Requirements

MTH 130 - Ordinary Differential Equations

Course Units: 1.0 Topics include first and second-order differential equations and first-order systems, including analytic, geometric, and numerical techniques, classification of first-order linear systems by eigenvalues, forcing and resonance, and the Laplace transform. Applications include but are not limited to population models, RC circuits, and damped and undamped harmonic oscillators. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 **Note:** Not open to students who have passed MTH 234 . **CC:** GDQR

or

MTH 234 - Differential Equations

Course Units: 1.0 Topics include differential equations and models, asymptotic solutions, eigenvalues and eigenvectors, classification of planar systems, higher-dimensional linear algebra, canonical form, linear and nonlinear systems, and applications. **Prerequisite(s):** MTH 115 and MTH 199, or permission from the Chair. **Prereq/Corequisite(s):** Not open to students who have passed MTH 130. **CC:** GDQR

MTH 197 - Discrete Mathematics for Computer Science

Course Units: 1.0 An introduction to fundamental concepts and methods of proof in mathematics and computer science. Topics include elementary logic, functions, relations, sets, and basic combinatorics. **Note:** Not open to students who have passed MTH 199 . **CC:** QMR

or

MTH 199 - Introduction to Logic and Set Theory

Course Units: 1.0 Designed to enable the student to develop the ability to understand and communicate mathematical arguments. Logic and set theory from the core. Selected topics are covered at the discretion of the instructor. For those considering any form of mathematics major, the department recommends that Math 199 be taken by fall term of the sophomore year, if possible. **Note:** Credit is not normally given for both MTH 197 and MTH 199. MTH 115 is usually taken before MTH 199. **Prerequisite(s):** One of MTH 112, MTH 113 ,MTH 115 , MTH 115H, MTH 117 , IMP 120 or permission of the department chair. **CC:** WAC, WAC-R

One math elective from

STA 104 - Introduction to Statistics

Course Units: 1.0 This course is intended to provide the conceptual foundations, and also analytical skills, for students to be able to quantify uncertainty, and further, to make rational decisions in the face of uncertainty. It addresses collection of high-quality data, basic statistical analysis of such data, including use of computer software, and drawing actionable conclusions from analyses. These conclusions include understanding the limitations of statistical analyses. The integration of subject matter knowledge with data analysis within the sequential cycle of scientific inquiry will be emphasized. This course is also intended to prepare students for more advanced statistics courses, such as those in experimental design or regression analysis. **Prereq/Corequisite(s):** This course is designed for first year students and sophomores, and preference will be given to such students in accepting petitions. Not open to students who have passed STA 064, STA 164, STA 264, MTH 115 , MER 301, IMP 120 , ECO 243 or PSY 200 **CC:** QMR, JDQR **ISP:** ENS

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

MTH 127 - Numerical Methods

Course Units: 1.0 Newton's method, numerical differentiation and integration, solution of ordinary differential equations, error estimates. **Prerequisite(s):** MTH 115 and fluency in some mathematical programming language.

MTH 140 - Applied Linear Algebra

Course Units: 1.0 Linear algebra has an enormous number of applications to the sciences and engineering. This course will cover the basics of linear algebra in Euclidean n-space, including linear systems, linear transformations, determinants, eigenvalues and eigenvectors, orthogonality, and the singular value decomposition. An emphasis will be placed on applications, chosen from least-squares fitting, linear programming, image compression, Markov chains and discrete dynamical systems, computer graphics, principal component analysis, the Google PageRank algorithm, and others. Computer software such as MATLAB or Mathematica will be used in this course to perform numerical calculations. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 . **Note:** Credit will not normally be given for both MTH 140 and MTH 340 . Exceptions require approval of a proposal from the student to the department chair.

STA 164 - Strategies of Experimentation: Statistical Design and Analysis of Experiments

Course Units: 1.0 Experimentation is at the heart of the scientific method, both in the physical and social sciences. Not only do experiments validate or disprove existing hypotheses, but often unexpected results lead to the development of new hypotheses and new theoretical understanding. This course will focus on strategies to accelerate the scientific method when experimenting with multiple variables. Specific topics include design options, such as simple comparative experiments, factorials and fractional factorials, and response surface designs, as well as analysis methods such as graphical methods, analysis of variance, and regression models. **Prerequisite(s):** One of STA 104 ,STA 128 /MTH 128 , STA 264 , STA228/MTH 228 , MER 301, ECO 243, PSY 200 or permission from the Chair. **CC:** QMR **ISP:** ENS

MTH 221 - Mathematical Cryptology

Course Units: 1.0 An in-depth look at the mathematical theory underlying modern methods to accomplish the secret transmission of messages, as well as other tasks related to data security, privacy, and authentication. **Note:** Not normally open to students who have passed MTH 235 or MTH 051. **Prerequisite(s):** MTH 199 or permission from the Chair. **CC:** GDQR **ISP:** STS

MTH 235 - Number Theory

Course Units: 1.0 Properties of natural numbers including divisibility, prime numbers, congruences, special number theoretic functions and quadratic reciprocity. **Prerequisite(s):** MTH 199 or permission from the Chair. **Prereq/Corequisite(s):** MTH 235 normally is closed to students who have passed MTH 221 .

MTH 238 - Methods of Applied Mathematics

Course Units: 1.0 An introduction to the fundamental concepts and techniques in applied mathematics. Topics may include dimensional analysis, scaling, perturbation theory, boundary layer analysis, differential and integral equations, calculus of variations, optimization, and eigenvalue problems. The emphasis is the use of mathematics to quantify and solve problems arising from physical, chemical, biological, and economic phenomena. **Prerequisite(s):** MTH 130 or MTH 234 and MTH 197 or MTH 199

STA 264 - Regression Analysis

Course Units: 1.0 Regression analysis is one of the most important and influential methods in statistics, finding application in virtually all disciplines, from business to healthcare to sociology to the hard sciences. This course will cover both the science of regression analysis - its underlying mathematical theory, as well as the art of its practical application. The course project will involve development of a regression model to fit a real data set. Lectures will be given primarily in matrix notation, i.e., using linear algebra. While the course will not be all-encompassing in itself due to time constraints, it would be good preparation for more advanced modeling courses involving data mining, machine

learning, "Big Data", and so on. Prior understanding of statistical concepts is assumed **Prerequisite(s):** MTH 115 and one of STA 104 , ECO 243, STA 164 , PSY 200, MER 301 or permission from the Chair. **ISP:** ENS

MTH 340 - Linear Algebra

Course Units: 1.0 Vector spaces, linear transformations, inner product and dual spaces, eigenvalues and eigenvectors, special topics. **Prerequisite(s):** One of MTH 115, MTH 115H or IMP 121 and one of MTH 219, MTH 221, MTH 224, MTH 228 , MTH 235, MTH 248 , or permission from the Chair. **Note:** Credit will not normally be given for both MTH 140 and MTH 340. Exceptions require approval of a proposal from the student to the department chair.

- *These math electives require MTH 199 as a prerequisite.

One Natural Science

One natural science elective numbered 100 or higher: any course (may or may not include a laboratory component) at level 100 or higher in Chemistry, Physics, Astronomy, Biology, Geosciences, or ENS 100 (ENS courses other than 100 do not satisfy this requirement). This major requirement is distinct from the Common Curriculum Natural Science with Laboratory requirement (which engineering majors satisfy by taking PHY 120).

Engineering Science:

ESC 100 - Exploring Engineering

Course Units: 1.0 An introduction to engineering including fundamental topics core to engineering. The course includes a weekly design studio that emphasizes engineering design, teamwork, technical writing and ethics through several individual and team design projects. Not available to junior or senior engineering students. **Corequisite(s):** ESC 100L **CC:** SET, GETS **ISP:** STS **Note:** General engineering course common to more than one program.

Computer Engineering Core:

One from

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 104 - Robots Rule! Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a robotics theme. Introduces students to algorithms, basic data structures, and programming techniques. Students will build and program robots, exploring mobility, navigation, sensing, and inter-robot communication. Additional class topics include: history of robotics, social and ethical issues, emotionally intelligent behavior and other current topics in robotics. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once

one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 105 - Game Development: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a computer games theme. Introduces students to algorithms, basic data structures, and programming techniques. Computer game development is used as an example application area and students implement their own games throughout the course. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area, focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 108 - Scientific Computing: Introduction to Computer Science

Course Units: 1.0 Computers are used as tools in analyzing and solving scientific problems as well as being embedded in many applications and experimental equipment used by today's scientists. This course is designed to introduce students to computer programming and problem solving through the use of Python. Python is a language commonly used by the scientific community, and we will focus on using it to address scientific problems, using extensions that facilitate scientific computing. CC: QMR, SET Note: A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

And

ECE 118 - Introduction to Computer and Logic Design

Course Units: 1.0 Fundamental material in the area of digital logic circuit analysis and synthesis, and computer organization. The components of digital computers are studied at the gate level, the function level, and the machine organization level. Weekly laboratory exercises are required. **Cross-Listed:** CSC 118 **Corequisite(s):** ECE 118L **CC:** SET

ECE 218 - Embedded Microcontroller Projects

Course Units: 1.0 Focuses on the design and implementation of microcontroller systems. Topics include microcontroller architecture, interfacing, programming for control applications, multitasking, and tools used in embedded system design. The course includes a weekly project-based laboratory. **Prerequisite(s):** ECE 118 and one course from the following: CSC 103, CSC 104, CSC 105, CSC 106, CSC 107, or CSC 108 **Corequisite(s):** ECE 218L **CC:** SET

ECE 225 - Electric Circuits

Course Units: 1.0 Basic electrical circuit concepts and devices such as Ohm's law, Kirchhoff's laws, Thevenin and Norton equivalents, operational amplifiers, analysis methods, capacitors, inductors, ideal transformers, phasors, AC steady state analysis, complex power, frequency response and filters. Includes a weekly lab. Not open to Mechanical Engineering major **Cross-Listed:** BME 225 **Prerequisite(s):** MTH 112 or MTH 113 **Corequisite(s):** ECE 225L

ECE 240 - Circuits and Systems

Course Units: 1.0 Transient analysis of RLC circuits; modeling of circuits using differential equations; system models and properties; Laplace transforms applied to circuit and system design and analysis; system functions; complex frequency; poles and zeros; stability; frequency response; filter design. Includes a weekly lab. Not open to Mechanical Engineering majors **Cross-Listed:** BME 240 **Prerequisite(s):** ECE 225 or BME 225 **Corequisite(s):** ECE 240L **CC:** WAC

ECE 241 - Discrete Systems

Course Units: 1.0 Discrete signals and systems; classification and properties of systems; difference equations; Z-transform; Fourier series, Fourier transforms, the DFT and FFT; filters and filter design; A/D and D/A converters; applications to audio signal processing. Includes a weekly lab. **Cross-Listed:** BME 241 **Prerequisite(s):** ECE 240 or BME 240 **Corequisite(s):** ECE 241L **CC:** WAC **ISP:** FLM

ECE 248 - Introduction to Semiconductor Devices and Circuits

Course Units: 1.0 Semiconductors: theory of operation of diodes and transistors; circuit models; basic electronic circuits and amplifiers: transfer characteristics and inverters. Includes a weekly lab. **Prerequisite(s):** ECE 225 or BME 225 **Corequisite(s):** ECE 248L

ECE 351 - Probability and Digital Communications

Course Units: 1.0 An introduction to probability with an emphasis on applications in digital communications. Digital signaling, coding, probability of error, matched filters, optimum receiver design, source entropy, channel capacity. **Prerequisite(s):** ECE 118, ECE 240

CSC 120 - Programming on Purpose

Course Units: 1.0 An introduction to software design principles aimed at making software more efficient, robust, readable, maintainable, and reusable. An introduction to object-oriented programming and design, including classes, objects, methods, and sub-typing. **Prerequisite(s):** C- or better in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 or CSC 108 . A grade of C- or better is required to continue with any course that requires CSC 120 as a prerequisite. **CC:** SET

CSC 151 - Data Structures

Course Units: 1.0 Basic concepts of data organization and abstraction, software design, stacks, queues, trees, and their implementation with linked structures. Programming in Java. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 120 . MTH 199 can be substituted for MTH 197 **Prereq/Corequisite(s):** A grade of C- or better is required in order to continue with any course that requires CSC 151 as a prerequisite.

CSC 250 - Algorithm Design and Analysis

Course Units: 1.0 Fundamental algorithms used in a variety of applications. Includes algorithms on list processing, string processing, geometric algorithms, and graph algorithms. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197. Note: A grade of C- or better is required in order to continue with any course that requires CSC-250 as a prerequisite. **CC:** WAC

or

CSC 260 - Large-Scale Software Development

Course Units: 1.0 Strategies for the systematic design, implementation, and testing of large software systems. Design notations, tools, and techniques. Design patterns and implementation idioms. Implementation, debugging, and testing. Includes team and individual software development projects. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 270 - Computer Organization

Course Units: 1.0 The architecture and operation of the digital computer. CPU design, input/output, computer arithmetic, assembly language. **Prerequisite(s):** C- or higher in CSC 120 **Corequisite(s):** CSC 270L **Lecture/Lab Hours** Includes a laboratory.

CSC 333 - High Performance Computing

Course Units: 1.0 Synchronization and communication in concurrent programs. Parallel computing with libraries for shared-memory programming and for cluster computing. Introduction to algorithms for parallel scientific computing. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

or

CSC 335 - Operating Systems

Course Units: 1.0 Selected topics in operating system development including process and thread management, concurrency, memory and file system management, resource allocation, job scheduling, and security. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 and CSC 270 and Junior standing. MTH 199 can be substituted for MTH 197

or

CSC 375 - Compiler Design

Course Units: 1.0 Principles and practices for the design and implementation of compilers and interpreters. Will cover the stages of the compilation and execution process: lexical analysis; parsing; symbol tables; type systems; scope; semantic analysis; intermediate representations; run-time environments and interpreters; code generation; program analysis and optimization; and garbage collection. Students will construct a full compiler for a simple object-oriented language. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197. Recommended: CSC 260

or

ECE 366 - Control Systems

Course Units: 1.0 Modeling of control systems by block diagrams and flow graphs. Analysis of control systems response, error and stability, Root-Locus method, and frequency domain methods (Nyquist, Bode, and Nichols). **Prerequisite(s):** ECE 240 **Corequisite(s):** ECE 366L **Lecture/Lab Hours** One lab per week.

ECE 318 - Digital Design

Course Units: 1.0 The design of digital hardware systems at the module level using modern approaches. Datapath and control unit design, hardware description languages, programmable device implementations. Weekly laboratory exercises using electronic design automation tools and a design project are required. **Cross-Listed:** CSC 318 **Prerequisite(s):** ECE 118 **Corequisite(s):** ECE 318L

or

CSC 318 - Digital Design

Course Units: 1.0 **Cross-Listed:** ECE 318 **Corequisite(s):** CSC 318L

ECE 336 - Computer Network Protocols

Course Units: 1.0 Design, analysis, and operation of communication protocols for computer networks; TCP/IP, addressing, switching, routing, congestion control, application protocols. **Cross-Listed:** CSC 236 **Prerequisite(s):** CSC 100-level and either ECE 118 / CSC 118 or CSC 120

or

CSC 236 - Computer Network Protocols

Course Units: 1.0 Design, analysis, and operation of communication protocols for computer networks; TCP/IP, addressing, switching, routing, congestion control, application protocols. **Cross-Listed:** ECE 336

or

ECE 337 - Data Communications and Networks

Course Units: 1.0 An introduction to the physical and data link layers of data communication networks, including error detection, and local area networks. **Cross-Listed:** CSC 237 **Prerequisite(s):** CSC 100-level and ECE 118 / CSC 118 or CSC 120

or

CSC 237 - Data Communications and Networks

Course Units: 1.0 **Cross-Listed:** ECE 337

Computer Engineering Electives:

Three additional CSC or ECE courses numbered 300 or higher. Students who take both CSC 250 and CSC 260 can count one of them as a Computer Engineering elective.

Capstone Design:

ECE 497 - Electrical and Computer Engineering Capstone Design Project 1

Course Units: 0.5 Topics in the seminar include professional and ethical responsibilities; the historical and societal context of electrical and computer engineering; contemporary issues, and the specification, analysis, design, implementation, and testing phases of a design project. Research papers, project reports, and oral presentations are required.

ECE 498 - Electrical and Computer Engineering Capstone Design Project 2

Course Units: 0.5 The second term of the capstone design project. Students complete the design and begin the implementation of a system under the supervision of one or more faculty members. An oral presentation and design report are required. **CC:** WAC, WAC-R

ECE 499 - Electrical and Computer Engineering Capstone Design Project 3

Course Units: 1.0 Students complete the implementation, testing, and evaluation of a system under the supervision of one or more faculty members. A final presentation and design report are required. **CC:** WS

Electives:

Elective courses should be chosen in consultation with the student's advisor to satisfy the Common Curriculum and to enhance individual educational objectives. These elective courses, in addition to the electives in math, science and computer engineering, can be customized to complete a minor and pursue specific interests.

Sample schedule starting with Math 113:

Students with different math backgrounds will have slightly different math sequences.

First Year

ESC 100 - Exploring Engineering

Course Units: 1.0 An introduction to engineering including fundamental topics core to engineering. The course includes a weekly design studio that emphasizes engineering design, teamwork, technical writing and ethics through several individual and team design projects. Not available to junior or senior engineering students. **Corequisite(s):** ESC 100L **CC:** SET, GETS **ISP:** STS **Note:** General engineering course common to more than one program.

FYI 100 - First-Year Inquiry

Course Units: 1.0 First-Year Inquiry engages students in the exploration of ideas and diverse perspectives through critical reading, thinking, and writing.

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

- Electives (2)*

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

or

CSC 104 - Robots Rule! Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a robotics theme. Introduces students to algorithms, basic data structures, and programming techniques. Students will build and program robots, exploring mobility, navigation, sensing, and inter-robot communication. Additional class topics include: history of robotics, social and ethical issues, emotionally intelligent behavior and other current topics in robotics. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

or

CSC 105 - Game Development: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a computer games theme. Introduces students to algorithms, basic data structures, and programming techniques. Computer game development is used as an example application area and students implement their own games throughout the course. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

or

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

or

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area, focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

or

CSC 108 - Scientific Computing: Introduction to Computer Science

Course Units: 1.0 Computers are used as tools in analyzing and solving scientific problems as well as being embedded in many applications and experimental equipment used by today's scientists. This course is designed to introduce students to computer programming and problem solving through the use of Python. Python is a language commonly used by the scientific community, and we will focus on using it to address scientific problems, using extensions that facilitate scientific computing. CC: QMR, SET Note: A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

Science elective

CSC 120 - Programming on Purpose

Course Units: 1.0 An introduction to software design principles aimed at making software more efficient, robust, readable, maintainable, and reusable. An introduction to object-oriented programming and design, including classes, objects, methods, and sub-typing. **Prerequisite(s):** C- or better in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 or CSC 108 . A grade of C- or better is required to continue with any course that requires CSC 120 as a prerequisite. **CC:** SET

Second Year

ECE 118 - Introduction to Computer and Logic Design

Course Units: 1.0 Fundamental material in the area of digital logic circuit analysis and synthesis, and computer organization. The components of digital computers are studied at the gate level, the function level, and the machine organization level. Weekly laboratory exercises are required. **Cross-Listed:** CSC 118 **Corequisite(s):** ECE 118L **CC:** SET

MTH 197 - Discrete Mathematics for Computer Science

Course Units: 1.0 An introduction to fundamental concepts and methods of proof in mathematics and computer science. Topics include elementary logic, functions, relations, sets, and basic combinatorics. **Note:** Not open to students who have passed MTH 199 . **CC:** QMR

or

MTH 199 - Introduction to Logic and Set Theory

Course Units: 1.0 Designed to enable the student to develop the ability to understand and communicate mathematical arguments. Logic and set theory from the core. Selected topics are covered at the discretion of the instructor. For those considering any form of mathematics major, the department recommends that Math 199 be taken by fall term of the sophomore year, if possible. **Note:** Credit is not normally given for both MTH 197 and MTH 199. MTH 115 is usually taken before MTH 199. **Prerequisite(s):** One of MTH 112, MTH 113 ,MTH 115 , MTH 115H, MTH 117 , IMP 120 or permission of the department chair. **CC:** WAC, WAC-R

ECE 225 - Electric Circuits

Course Units: 1.0 Basic electrical circuit concepts and devices such as Ohm's law, Kirchhoff's laws, Thevenin and Norton equivalents, operational amplifiers, analysis methods, capacitors, inductors, ideal transformers, phasors, AC steady state analysis, complex power, frequency response and filters. Includes a weekly lab. Not open to Mechanical Engineering major **Cross-Listed:** BME 225 **Prerequisite(s):** MTH 112 or MTH 113 **Corequisite(s):** ECE 225L

ECE 218 - Embedded Microcontroller Projects

Course Units: 1.0 Focuses on the design and implementation of microcontroller systems. Topics include microcontroller architecture, interfacing, programming for control applications, multitasking, and tools used in embedded system design. The course includes a weekly project-based laboratory. **Prerequisite(s):** ECE 118 and one course from the following: CSC 103, CSC 104, CSC 105, CSC 106, CSC 107, or CSC 108 **Corequisite(s):** ECE 218L **CC:** SET

MTH 130 - Ordinary Differential Equations

Course Units: 1.0 Topics include first and second-order differential equations and first-order systems, including analytic, geometric, and numerical techniques, classification of first-order linear systems by eigenvalues, forcing and resonance, and the Laplace transform. Applications include but are not limited to population models, RC circuits, and damped and undamped harmonic oscillators. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 **Note:** Not open to students who have passed MTH 234 . **CC:** GDQR

or

MTH 234 - Differential Equations

Course Units: 1.0 Topics include differential equations and models, asymptotic solutions, eigenvalues and eigenvectors, classification of planar systems, higher-dimensional linear algebra, canonical form, linear and nonlinear systems, and applications. **Prerequisite(s):** MTH 115 and MTH 199, or permission from the Chair. **Prereq/Corequisite(s):** Not open to students who have passed MTH 130. **CC:** GDQR

ECE 240 - Circuits and Systems

Course Units: 1.0 Transient analysis of RLC circuits; modeling of circuits using differential equations; system models and properties; Laplace transforms applied to circuit and system design and analysis; system functions; complex frequency; poles and zeros; stability; frequency response; filter design. Includes a weekly lab. Not open to Mechanical Engineering majors **Cross-Listed:** BME 240 **Prerequisite(s):** ECE 225 or BME 225 **Corequisite(s):** ECE 240L **CC:** WAC

ECE 241 - Discrete Systems

Course Units: 1.0 Discrete signals and systems; classification and properties of systems; difference equations; Z-transform; Fourier series, Fourier transforms, the DFT and FFT; filters and filter design; A/D and D/A converters; applications to audio signal processing. Includes a weekly lab. **Cross-Listed:** BME 241 **Prerequisite(s):** ECE 240 or BME 240 **Corequisite(s):** ECE 241L **CC:** WAC **ISP:** FLM

CSC 151 - Data Structures

Course Units: 1.0 Basic concepts of data organization and abstraction, software design, stacks, queues, trees, and their implementation with linked structures. Programming in Java. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 120 . MTH 199 can be substituted for MTH 197 **Prereq/Corequisite(s):** A grade of C- or better is required in order to continue with any course that requires CSC 151 as a prerequisite.

- Electives*

Third Year****

CSC 270 - Computer Organization

Course Units: 1.0 The architecture and operation of the digital computer. CPU design, input/output, computer arithmetic, assembly language. **Prerequisite(s):** C- or higher in CSC 120 **Corequisite(s):** CSC 270L **Lecture/Lab Hours** Includes a laboratory.

CSC 250 - Algorithm Design and Analysis

Course Units: 1.0 Fundamental algorithms used in a variety of applications. Includes algorithms on list processing, string processing, geometric algorithms, and graph algorithms. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197. Note: A grade of C- or better is required in order to continue with any course that requires CSC-250 as a prerequisite. **CC:** WAC

or

CSC 260 - Large-Scale Software Development

Course Units: 1.0 Strategies for the systematic design, implementation, and testing of large software systems. Design notations, tools, and techniques. Design patterns and implementation idioms. Implementation, debugging, and testing. Includes team and individual software development projects. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

ECE 318 - Digital Design

Course Units: 1.0 The design of digital hardware systems at the module level using modern approaches. Datapath and control unit design, hardware description languages, programmable device implementations. Weekly laboratory exercises using electronic design automation tools and a design project are required. **Cross-Listed:** CSC 318 **Prerequisite(s):** ECE 118 **Corequisite(s):** ECE 318L

or

CSC 318 - Digital Design

Course Units: 1.0 **Cross-Listed:** ECE 318 **Corequisite(s):** CSC 318L

ECE 248 - Introduction to Semiconductor Devices and Circuits

Course Units: 1.0 Semiconductors: theory of operation of diodes and transistors; circuit models; basic electronic circuits and amplifiers: transfer characteristics and inverters. Includes a weekly lab. **Prerequisite(s):** ECE 225 or BME 225 **Corequisite(s):** ECE 248L

ECE 497 - Electrical and Computer Engineering Capstone Design Project 1

Course Units: 0.5 Topics in the seminar include professional and ethical responsibilities; the historical and societal context of electrical and computer engineering; contemporary issues, and the specification, analysis, design, implementation, and testing phases of a design project. Research papers, project reports, and oral presentations are required.

ECE or CSC elective
Electives (5)*

Fourth Year

- Math elective

ECE 336 - Computer Network Protocols

Course Units: 1.0 Design, analysis, and operation of communication protocols for computer networks; TCP/IP, addressing, switching, routing, congestion control, application protocols. **Cross-Listed:** CSC 236 **Prerequisite(s):** CSC 100-level and either ECE 118 / CSC 118 or CSC 120

or

CSC 236 - Computer Network Protocols

Course Units: 1.0 Design, analysis, and operation of communication protocols for computer networks; TCP/IP, addressing, switching, routing, congestion control, application protocols. **Cross-Listed:** ECE 336

or

ECE 337 - Data Communications and Networks

Course Units: 1.0 An introduction to the physical and data link layers of data communication networks, including error detection, and local area networks. **Cross-Listed:** CSC 237 **Prerequisite(s):** CSC 100-level and ECE 118 / CSC 118 or CSC 120

or

CSC 237 - Data Communications and Networks

Course Units: 1.0 **Cross-Listed:** ECE 337

ECE 351 - Probability and Digital Communications

Course Units: 1.0 An introduction to probability with an emphasis on applications in digital communications. Digital signaling, coding, probability of error, matched filters, optimum receiver design, source entropy, channel capacity. **Prerequisite(s):** ECE 118, ECE 240

ECE 498 - Electrical and Computer Engineering Capstone Design Project 2

Course Units: 0.5 The second term of the capstone design project. Students complete the design and begin the implementation of a system under the supervision of one or more faculty members. An oral presentation and design report are required. **CC:** WAC, WAC-R

ECE 499 - Electrical and Computer Engineering Capstone Design Project 3

Course Units: 1.0 Students complete the implementation, testing, and evaluation of a system under the supervision of one or more faculty members. A final presentation and design report are required. **CC:** WS

CSC 335 - Operating Systems

Course Units: 1.0 Selected topics in operating system development including process and thread management, concurrency, memory and file system management, resource allocation, job scheduling, and security. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 and CSC 270 and Junior standing. MTH 199 can be substituted for MTH 197

or

CSC 333 - High Performance Computing

Course Units: 1.0 Synchronization and communication in concurrent programs. Parallel computing with libraries for shared-memory programming and for cluster computing. Introduction to algorithms for parallel scientific computing. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

or

CSC 375 - Compiler Design

Course Units: 1.0 Principles and practices for the design and implementation of compilers and interpreters. Will cover the stages of the compilation and execution process: lexical analysis; parsing; symbol tables; type systems; scope; semantic analysis; intermediate representations; run-time environments and interpreters; code generation; program analysis and optimization; and garbage collection. Students will construct a full compiler for a simple object-oriented language. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197. Recommended: CSC 260

or

ECE 366 - Control Systems

Course Units: 1.0 Modeling of control systems by block diagrams and flow graphs. Analysis of control systems response, error and stability, Root-Locus method, and frequency domain methods (Nyquist, Bode, and Nichols). **Prerequisite(s):** ECE 240 **Corequisite(s):** ECE 366L **Lecture/Lab Hours** One lab per week.

ECE or CSC electives (2)

Electives (2)*

Note(s):

* Electives should be chosen to meet Common Curriculum requirements and attain individual educational goals. Students should work with their academic advisor to develop an appropriate plan of study.

** One course from CSC 103 - CSC 108 and either MTH 197 or MTH 199 should be taken before the winter term of the second year.

**** The fall term of the third year is the most common term for going on a full term abroad.

With appropriate planning, students may go on a winter or spring term abroad instead.

Requirements for Honors in Computer Engineering:

In addition to meeting all of the general college requirements for honors, candidates for honors in computer engineering must present their senior project at the Steinmetz Symposium.

Computer Science

Chair: Associate Professor J. Rieffel
Faculty: Associate Professors A. Cass, C. Fernandes, J. Rieffel, K. Striegnitz, N. Webb; Assistant Professors M. Anderson, P. Talkad Sukumar; Visiting Assistant Professor Z. Orhan.
Staff: L. Galeo (Administrative Assistant), M. McClosky (System Administrator)

The department offers a B.S. in Computer Science, supports the B.S. in Computer Engineering offered by the Electrical, Computer, and Biomedical Engineering Department, and supports a program in Digital Art with the Visual Arts department.

The department also participates in offering three minors: a traditional minor in Computer Science, a minor in Data Analytics, and a minor in Digital Media in collaboration with the Visual Arts department.

Introductory Courses

Each CS major or minor program includes one course from the following list: (CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108) Each course focuses on a distinct application area. The courses all cover the same basic computer science concepts and programming skills and only one may be counted toward a major or minor. These courses are open to non-majors and are prerequisite to certain intermediate courses that are also available to and suitable for non-majors. A grade of C- or better is required in order to take any course that requires an introductory course as a prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. All of these courses satisfy SET or QMR of the Common Curriculum.

Computer Science (ID), B.S.

Requirements for the ID Major:

Nine computer science courses: six core + three electives. MTH 197 or MTH 199 is also required.

Six Core CS Courses & Discrete Mathematics:

An introductory course, chosen from:

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 104 - Robots Rule! Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a robotics theme. Introduces students to algorithms, basic data structures, and programming techniques. Students will build and program robots, exploring mobility, navigation, sensing, and inter-robot communication. Additional class topics include: history of robotics, social and ethical issues, emotionally intelligent behavior and other current topics in robotics. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 105 - Game Development: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a computer games theme. Introduces students to algorithms, basic data structures, and programming techniques. Computer game development is used as an example application area and students implement their own games throughout the course. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area, focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 108 - Scientific Computing: Introduction to Computer Science

Course Units: 1.0 Computers are used as tools in analyzing and solving scientific problems as well as being embedded in many applications and experimental equipment used by today's scientists. This course is designed to introduce students to computer programming and problem solving through the use of Python. Python is a language commonly used by the scientific community, and we will focus on using it to address scientific problems, using extensions that

facilitate scientific computing. CC: QMR, SET Note: A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

all of the following:

CSC 120 - Programming on Purpose

Course Units: 1.0 An introduction to software design principles aimed at making software more efficient, robust, readable, maintainable, and reusable. An introduction to object-oriented programming and design, including classes, objects, methods, and sub-typing. **Prerequisite(s):** C- or better in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 or CSC 108 . A grade of C- or better is required to continue with any course that requires CSC 120 as a prerequisite. **CC:** SET

CSC 151 - Data Structures

Course Units: 1.0 Basic concepts of data organization and abstraction, software design, stacks, queues, trees, and their implementation with linked structures. Programming in Java. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 120 . MTH 199 can be substituted for MTH 197 **Prereq/Corequisite(s):** A grade of C- or better is required in order to continue with any course that requires CSC 151 as a prerequisite.

CSC 250 - Algorithm Design and Analysis

Course Units: 1.0 Fundamental algorithms used in a variety of applications. Includes algorithms on list processing, string processing, geometric algorithms, and graph algorithms. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197. Note: A grade of C- or better is required in order to continue with any course that requires CSC-250 as a prerequisite. **CC:** WAC

CSC 260 - Large-Scale Software Development

Course Units: 1.0 Strategies for the systematic design, implementation, and testing of large software systems. Design notations, tools, and techniques. Design patterns and implementation idioms. Implementation, debugging, and testing. Includes team and individual software development projects. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 488 - Computer Science Capstone Project

Course Units: 1 This course is required by, and limited to, seniors who are not completing their WS requirement. In this course, students will explore current research in one area of computer science (the choice of topic will vary) by reading, discussing, and critically evaluating scholarly publications and by carrying out their own research on a related topic. Students will gain experience in giving oral presentations and writing conference style papers in computer science. **Prereq/Corequisite(s):** Any CSC 300-leve course that fulfills the WAC-R requirement. **CC:** WS

And

MTH 197 - Discrete Mathematics for Computer Science

Course Units: 1.0 An introduction to fundamental concepts and methods of proof in mathematics and computer science. Topics include elementary logic, functions, relations, sets, and basic combinatorics. **Note:** Not open to students who have passed MTH 199 . **CC:** QMR

or

MTH 199 - Introduction to Logic and Set Theory

Course Units: 1.0 Designed to enable the student to develop the ability to understand and communicate mathematical arguments. Logic and set theory from the core. Selected topics are covered at the discretion of the instructor. For those considering any form of mathematics major, the department recommends that Math 199 be taken by fall term of the sophomore year, if possible. **Note:** Credit is not normally given for both MTH 197 and MTH 199. MTH 115 is usually taken before MTH 199. **Prerequisite(s):** One of MTH 112, MTH 113 ,MTH 115 , MTH 115H, MTH 117 , IMP 120 or permission of the department chair. **CC:** WAC, WAC-R

Three Electives:

ID majors take three distinct CSC electives numbered 110 or higher. Two of the electives must be at least 300-level, at least one of which is designated as a WAC-R course.

Requirements for Honors in Computer Science

Candidates for honors in computer science must (a) have a minimum overall grade point average of 3.3 and a minimum grade point average in the major of 3.3; (b) earn A- or better for CSC 488 ; and (c) must present their senior project at the Steinmetz Symposium or another public venue chosen in consultation with the department chair.

Course Selection Guidelines

Placement: A score of 4 or 5 on the AP Computer Science "A" exam will count as having satisfied one of the introductory courses (CSC 103, CSC 104, CSC 105, CSC 106, CSC 107, CSC 108). A score of 4 or 5 on the AP Computer Science Principles exam will count as having satisfied a 100-level elective.

Computer Science Minor

Requirements for the Minor:

6 computer science courses: **three core** + **three additional courses** chosen with the approval of an advisor from Computer Science. MTH 197 or MTH 199 is also required. Computer Engineering majors are not eligible for this minor.

Three Core CS courses and Discrete Mathematics:

An introductory course, chosen from:

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 104 - Robots Rule! Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a robotics theme. Introduces students to algorithms, basic data structures, and programming techniques. Students will build and program robots, exploring mobility, navigation, sensing, and inter-robot communication. Additional class topics include: history of robotics, social and ethical issues, emotionally intelligent behavior and other current topics in robotics. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 105 - Game Development: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a computer games theme. Introduces students to algorithms, basic data structures, and programming techniques. Computer game development is used as an example application area and students implement their own games throughout the course. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area, focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 108 - Scientific Computing: Introduction to Computer Science

Course Units: 1.0 Computers are used as tools in analyzing and solving scientific problems as well as being embedded in many applications and experimental equipment used by today's scientists. This course is designed to introduce students to computer programming and problem solving through the use of Python. Python is a language commonly used by the scientific community, and we will focus on using it to address scientific problems, using extensions that facilitate scientific computing. CC: QMR, SET Note: A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

All of the following:

CSC 120 - Programming on Purpose

Course Units: 1.0 An introduction to software design principles aimed at making software more efficient, robust, readable, maintainable, and reusable. An introduction to object-oriented programming and design, including classes, objects, methods, and sub-typing. **Prerequisite(s):** C- or better in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 or CSC 108 . A grade of C- or better is required to continue with any course that requires CSC 120 as a prerequisite. **CC:** SET

CSC 151 - Data Structures

Course Units: 1.0 Basic concepts of data organization and abstraction, software design, stacks, queues, trees, and their implementation with linked structures. Programming in Java. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 120 . MTH 199 can be substituted for MTH 197 **Prereq/Corequisite(s):** A grade of C- or better is required in order to continue with any course that requires CSC 151 as a prerequisite.

And

MTH 197 - Discrete Mathematics for Computer Science

Course Units: 1.0 An introduction to fundamental concepts and methods of proof in mathematics and computer science. Topics include elementary logic, functions, relations, sets, and basic combinatorics. **Note:** Not open to students who have passed MTH 199 . **CC:** QMR

or

MTH 199 - Introduction to Logic and Set Theory

Course Units: 1.0 Designed to enable the student to develop the ability to understand and communicate mathematical arguments. Logic and set theory from the core. Selected topics are covered at the discretion of the instructor. For those considering any form of mathematics major, the department recommends that Math 199 be taken by fall term of the sophomore year, if possible. **Note:** Credit is not normally given for both MTH 197 and MTH 199. MTH 115 is usually taken before MTH 199. **Prerequisite(s):** One of MTH 112, MTH 113 ,MTH 115 , MTH 115H, MTH 117 , IMP 120 or permission of the department chair. **CC:** WAC, WAC-R

Three additional CS courses:

Minors choose **three** additional Computer Science courses, at least one of which is numbered 250 or higher. Only one course numbered below 100 may count towards the minor.

Computer Science, B.S.

Requirements for the Major:

12 computer science courses: seven core + five electives. Plus the capstone project sequence. Additional math and science requirements detailed below.

Seven core courses:

An introductory course, chosen from:

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 104 - Robots Rule! Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a robotics theme. Introduces students to algorithms, basic data structures, and programming techniques. Students will build and program robots, exploring mobility, navigation, sensing, and inter-robot communication. Additional class topics include: history of robotics, social and ethical issues, emotionally intelligent behavior and other current topics in robotics. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 105 - Game Development: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a computer games theme. Introduces students to algorithms, basic data structures, and programming techniques. Computer game development is used as an example application area and students implement their own games throughout the course. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area, focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 108 - Scientific Computing: Introduction to Computer Science

Course Units: 1.0 Computers are used as tools in analyzing and solving scientific problems as well as being embedded in many applications and experimental equipment used by today's scientists. This course is designed to introduce students to computer programming and problem solving through the use of Python. Python is a language commonly used by the scientific community, and we will focus on using it to address scientific problems, using extensions that

facilitate scientific computing. CC: QMR, SET Note: A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

and **all** of the following courses:

CSC 120 - Programming on Purpose

Course Units: 1.0 An introduction to software design principles aimed at making software more efficient, robust, readable, maintainable, and reusable. An introduction to object-oriented programming and design, including classes, objects, methods, and sub-typing. **Prerequisite(s):** C- or better in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 or CSC 108 . A grade of C- or better is required to continue with any course that requires CSC 120 as a prerequisite. **CC:** SET

CSC 151 - Data Structures

Course Units: 1.0 Basic concepts of data organization and abstraction, software design, stacks, queues, trees, and their implementation with linked structures. Programming in Java. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 120 . MTH 199 can be substituted for MTH 197 **Prereq/Corequisite(s):** A grade of C- or better is required in order to continue with any course that requires CSC 151 as a prerequisite.

CSC 250 - Algorithm Design and Analysis

Course Units: 1.0 Fundamental algorithms used in a variety of applications. Includes algorithms on list processing, string processing, geometric algorithms, and graph algorithms. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197. Note: A grade of C- or better is required in order to continue with any course that requires CSC-250 as a prerequisite. **CC:** WAC

CSC 260 - Large-Scale Software Development

Course Units: 1.0 Strategies for the systematic design, implementation, and testing of large software systems. Design notations, tools, and techniques. Design patterns and implementation idioms. Implementation, debugging, and testing. Includes team and individual software development projects. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 270 - Computer Organization

Course Units: 1.0 The architecture and operation of the digital computer. CPU design, input/output, computer arithmetic, assembly language. **Prerequisite(s):** C- or higher in CSC 120 **Corequisite(s):** CSC 270L **Lecture/Lab Hours** Includes a laboratory.

CSC 488 - Computer Science Capstone Project

Course Units: 1 This course is required by, and limited to, seniors who are not completing their WS requirement. In this course, students will explore current research in one area of computer science (the choice of topic will vary) by reading, discussing, and critically evaluating scholarly publications and by carrying out their own research on a related topic. Students will gain experience in giving oral presentations and writing conference style papers in computer science. **Prereq/Corequisite(s):** Any CSC 300-leve course that fulfills the WAC-R requirement. **CC:** WS

Five Electives:

Majors take **five** distinct CSC elective courses numbered 110 or higher. Four of the electives must be at least 300-level, at least one of which is designated as a WAC-R course.

Required Math courses:

A calculus sequence:

MTH 105 - Differential Calculus with Precalculus

Course Units: 1.0 Differential calculus of functions of a single variable, supplemented with supporting precalculus. Limits, continuity, differentiation, and applications. **CC:** QMR **ISP:** ENS **Note:** Not intended for students with credits for MTH 059 ,MTH 110 , MTH 113 , MTH 110P or MTH 113P.

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

or

MTH 110 - Calculus 1: Differential Calculus

Course Units: 1.0 Differential calculus of functions of a single variable. Limits, continuity, differentiation, computational aspects of Maclaurin and Taylor polynomials and series, and applications. **Note:** Not intended for students who have passed MTH 059 ,MTH 105 , MTH 113 , MTH 110P, or MTH 113P. **CC:** QMR **ISP:** ENS

- MTH 112 - Calculus 2: Integral Calculus

or

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

Discrete Math:

MTH 197 - Discrete Mathematics for Computer Science

Course Units: 1.0 An introduction to fundamental concepts and methods of proof in mathematics and computer science. Topics include elementary logic, functions, relations, sets, and basic combinatorics. **Note:** Not open to students who have passed MTH 199 . **CC:** QMR

or

MTH 199 - Introduction to Logic and Set Theory

Course Units: 1.0 Designed to enable the student to develop the ability to understand and communicate mathematical arguments. Logic and set theory from the core. Selected topics are covered at the discretion of the instructor. For those

considering any form of mathematics major, the department recommends that Math 199 be taken by fall term of the sophomore year, if possible. **Note:** Credit is not normally given for both MTH 197 and MTH 199. MTH 115 is usually taken before MTH 199. **Prerequisite(s):** One of MTH 112, MTH 113 ,MTH 115 , MTH 115H, MTH 117 , IMP 120 or permission of the department chair. **CC:** WAC, WAC-R

A math elective:

One Math elective chosen in consultation with the advisor. This can be satisfied with any MTH course, any STA course or one of ECO 243, and PSY 200; suggestions are as follows:

STA 104 - Introduction to Statistics

Course Units: 1.0 This course is intended to provide the conceptual foundations, and also analytical skills, for students to be able to quantify uncertainty, and further, to make rational decisions in the face of uncertainty. It addresses collection of high-quality data, basic statistical analysis of such data, including use of computer software, and drawing actionable conclusions from analyses. These conclusions include understanding the limitations of statistical analyses. The integration of subject matter knowledge with data analysis within the sequential cycle of scientific inquiry will be emphasized. This course is also intended to prepare students for more advanced statistics courses, such as those in experimental design or regression analysis. **Prereq/Corequisite(s):** This course is designed for first year students and sophomores, and preference will be given to such students in accepting petitions. Not open to students who have passed STA 064, STA 164, STA 264, MTH 115 , MER 301, IMP 120 , ECO 243 or PSY 200 **CC:** QMR, JDQR **ISP:** ENS

MTH 128 - Probability

Course Units: 1.0 This course is a survey of the basic concepts of probability theory including permutations and combinations, conditional probability, Bayes' formula, independence, discrete and continuous random variables, expectation and variance, the Central Limit Theorem, and selected topics. **Cross-Listed:** STA 128 **Prerequisite(s):** One of MTH 112, MTH 113, MTH 112P, MTH 113P, IMP 120, or IMP 121. **Note:** Not open to students who have passed or are taking MTH 199. Students who intend to minor in Mathematics or Financial and Actuarial Mathematics, or major in Mathematics should take MTH 228 /STA 228, as credit is not normally given for both MTH 128/STA 128 and MTH 228 /STA 228.

MTH 140 - Applied Linear Algebra

Course Units: 1.0 Linear algebra has an enormous number of applications to the sciences and engineering. This course will cover the basics of linear algebra in Euclidean n-space, including linear systems, linear transformations, determinants, eigenvalues and eigenvectors, orthogonality, and the singular value decomposition. An emphasis will be placed on applications, chosen from least-squares fitting, linear programming, image compression, Markov chains and discrete dynamical systems, computer graphics, principal component analysis, the Google PageRank algorithm, and others. Computer software such as MATLAB or Mathematica will be used in this course to perform numerical calculations. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 . **Note:** Credit will not normally be given for both MTH 140 and MTH 340 . Exceptions require approval of a proposal from the student to the department chair.

MTH 221 - Mathematical Cryptology

Course Units: 1.0 An in-depth look at the mathematical theory underlying modern methods to accomplish the secret transmission of messages, as well as other tasks related to data security, privacy, and authentication. **Note:** Not normally open to students who have passed MTH 235 or MTH 051. **Prerequisite(s):** MTH 199 or permission from the Chair. **CC:** GDQR **ISP:** STS

STA 264 - Regression Analysis

Course Units: 1.0 Regression analysis is one of the most important and influential methods in statistics, finding application in virtually all disciplines, from business to healthcare to sociology to the hard sciences. This course will cover both the science of regression analysis - its underlying mathematical theory, as well as the art of its practical application. The course project will involve development of a regression model to fit a real data set. Lectures will be given primarily in matrix notation, i.e., using linear algebra. While the course will not be all-encompassing in itself due to time constraints, it would be good preparation for more advanced modeling courses involving data mining, machine learning, "Big Data", and so on. Prior understanding of statistical concepts is assumed **Prerequisite(s):** MTH 115 and one of STA 104 , ECO 243, STA 164 , PSY 200, MER 301 or permission from the Chair. **ISP:** ENS

MTH 340 - Linear Algebra

Course Units: 1.0 Vector spaces, linear transformations, inner product and dual spaces, eigenvalues and eigenvectors, special topics. **Prerequisite(s):** One of MTH 115, MTH 115H or IMP 121 and one of MTH 219, MTH 221, MTH 224, MTH 228 , MTH 235, MTH 248 , or permission from the Chair. **Note:** Credit will not normally be given for both MTH 140 and MTH 340. Exceptions require approval of a proposal from the student to the department chair.

ECO 243 - Introduction to Econometrics

Course Units: 1.0 Descriptive statistics, probability, random variables and their distributions, sampling, statistical inference including confidence interval estimation, hypothesis testing, and regression analysis. Introduction to economic research using statistical methods to test theories. **Prerequisite(s):** ECO 101 **Prereq/Corequisite(s):** A minimum grade of C in ECO-243 is required to register for ECO 498 **CC:** SOCS **ISP:** ENS

PSY 200 - Statistical Methods in Psychology

Course Units: 1.0 The descriptive and inferential statistical procedures used by researchers to explain and analyze their results. Mean, variance, correlation, hypothesis testing using t-test, ANOVA, and nonparametric tests. **Prerequisite(s):** PSY 100 , PSY 210 / BIO 210 or (BIO 103 and BIO 104) **ISP:** ENS

A typical first year major program includes

- A 100-level introductory course

CSC 120 - Programming on Purpose

Course Units: 1.0 An introduction to software design principles aimed at making software more efficient, robust, readable, maintainable, and reusable. An introduction to object-oriented programming and design, including classes, objects, methods, and sub-typing. **Prerequisite(s):** C- or better in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 or CSC 108 . A grade of C- or better is required to continue with any course that requires CSC 120 as a prerequisite. **CC:** SET

- A calculus sequence
- First year Complex Questions coursework

Requirements for Honors in Computer Science

Candidates for honors in computer science must (a) have a minimum overall grade point average of 3.3 and a minimum grade point average in the major of 3.3; (b) earn A- or better for CSC 488 ; and (c) must present their senior project at the Steinmetz Symposium or another public venue chosen in consultation with the department chair.

Course Selection Guidelines

Placement: A score of 4 or 5 on the AP Computer Science "A" exam will count as having satisfied one of the introductory courses (CSC 103, CSC 104, CSC 105, CSC 106, CSC 107, CSC 108). A score of 4 or 5 on the AP Computer Science Principles exam will count as having satisfied a 100-level elective.

Data Analytics

Director: Associate Professor N. Webb (Computer Science)

The department of Computer Science offers a minor in Data Analytics, the process of analyzing, revealing, interpreting and visualizing information concealed inside data. The analysis of datasets is already revolutionizing our understanding of fields from genetics to Environmental Science, Economics to Engineering, English, History and Political Science. The minor will introduce students to the concepts underlying the acquisition, transformation, analysis and visualization of data and analytical outcomes, and will leverage courses across the college that address analytics in a discipline-specific way.

Data Analytics Minor

Requirements for the Minor

The department of Computer Science offers a minor in Data Analytics, the process of analyzing, revealing, interpreting and visualizing information concealed inside data. The analysis of datasets is already revolutionizing our understanding of fields from genetics to Environmental Science, Economics to Engineering, English, History and Political Science. The minor will introduce students to the concepts and techniques underlying the acquisition, transformation, analysis and visualization of data and analytical outcomes, and will leverage courses across the college that address analytics in a discipline-specific way. Requires the following six courses, four core courses and two electives. A maximum of **three** courses from the same department as your major may be used for the minor with advisor approval.

Four Core Courses:

An introductory CS course, one of the following:

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 104 - Robots Rule! Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a robotics theme. Introduces students to algorithms, basic data structures, and programming techniques. Students will build and program robots, exploring mobility, navigation, sensing, and inter-robot communication. Additional class topics include: history of robotics,

social and ethical issues, emotionally intelligent behavior and other current topics in robotics. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 105 - Game Development: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a computer games theme. Introduces students to algorithms, basic data structures, and programming techniques. Computer game development is used as an example application area and students implement their own games throughout the course. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area, focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 108 - Scientific Computing: Introduction to Computer Science

Course Units: 1.0 Computers are used as tools in analyzing and solving scientific problems as well as being embedded in many applications and experimental equipment used by today's scientists. This course is designed to introduce students to computer programming and problem solving through the use of Python. Python is a language commonly used by the scientific community, and we will focus on using it to address scientific problems, using extensions that facilitate scientific computing. CC: QMR, SET Note: A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

A statistics course, one of the following:

ECO 243 - Introduction to Econometrics

Course Units: 1.0 Descriptive statistics, probability, random variables and their distributions, sampling, statistical inference including confidence interval estimation, hypothesis testing, and regression analysis. Introduction to economic research using statistical methods to test theories. **Prerequisite(s):** ECO 101 **Prereq/Corequisite(s):** A minimum grade of C in ECO-243 is required to register for ECO 498 **CC:** SOCS **ISP:** ENS

MER 301 - Engineering Reliability

Course Units: 1.0 Engineering statistics; uncertainty analysis, data collection, computational statistics, probability, statistical inference, confidence limits, tolerance intervals, analysis of variance, least squares regression, and introduction to design of experiments. **Prerequisite(s):** MTH 115 or IMP 121. **CC:** SET

PSC 220 - Social Data Analysis

Course Units: 1.0 The analysis of social science data. Emphasis on testing substantive hypotheses by means of computer data processing and statistical techniques. **Cross-Listed:** SOC 201 **Prerequisite(s):** Any introductory social science course; a background in math is not necessary. **CC:** QMR, SOCS **ISP:** ENS

PSY 200 - Statistical Methods in Psychology

Course Units: 1.0 The descriptive and inferential statistical procedures used by researchers to explain and analyze their results. Mean, variance, correlation, hypothesis testing using t-test, ANOVA, and nonparametric tests. **Prerequisite(s):** PSY 100 , PSY 210 / BIO 210 or (BIO 103 and BIO 104) **ISP:** ENS

SOC 300 - Quantitative Methods of Social Research

Course Units: 1.0 Identifying sociopolitical questions and developing hypotheses; designing research instruments (questionnaires); basic statistics and introduction to social science computer analysis. **Prereq/Corequisite(s):** SOC 100 **CC:** SOCS, JDQR, JSPE **ISP:** ENS

STA 104 - Introduction to Statistics

Course Units: 1.0 This course is intended to provide the conceptual foundations, and also analytical skills, for students to be able to quantify uncertainty, and further, to make rational decisions in the face of uncertainty. It addresses collection of high-quality data, basic statistical analysis of such data, including use of computer software, and drawing actionable conclusions from analyses. These conclusions include understanding the limitations of statistical analyses. The integration of subject matter knowledge with data analysis within the sequential cycle of scientific inquiry will be emphasized. This course is also intended to prepare students for more advanced statistics courses, such as those in experimental design or regression analysis. **Prereq/Corequisite(s):** This course is designed for first year students and sophomores, and preference will be given to such students in accepting petitions. Not open to students who have passed STA 064, STA 164, STA 264, MTH 115 , MER 301, IMP 120 , ECO 243 or PSY 200 **CC:** QMR, JDQR **ISP:** ENS

STA 164 - Strategies of Experimentation: Statistical Design and Analysis of Experiments

Course Units: 1.0 Experimentation is at the heart of the scientific method, both in the physical and social sciences. Not only do experiments validate or disprove existing hypotheses, but often unexpected results lead to the development of new hypotheses and new theoretical understanding. This course will focus on strategies to accelerate the scientific method when experimenting with multiple variables. Specific topics include design options, such as simple comparative experiments, factorials and fractional factorials, and response surface designs, as well as analysis methods such as graphical methods, analysis of variance, and regression models. **Prerequisite(s):** One of STA 104 ,STA 128 /MTH 128 , STA 264 , STA228/MTH 228 , MER 301, ECO 243, PSY 200 or permission from the Chair. **CC:** QMR **ISP:** ENS

A data analytics course, at least one of the following (additional courses may be used as electives):

CSC 233 - Intro to Data Analytics

Course Units: 1.0

Data analytics, the process of analyzing, revealing, interpreting, and visualizing information concealed inside big data, is revolutionizing daily life, as used by companies such as Amazon, Google and Facebook, for the diagnosis of medical conditions or the way medical claims are handled, for investment strategies and real estate pricing, and in academia, with the analysis of historical texts, understanding the deliberations of the Supreme Court or the European Commission, or processing large amounts of genomics data.
In this class, students will be introduced to techniques to acquire data from the web, manipulate and pre-process data into manageable forms, perform analyses from a description and predictive standpoint, and learn the basics of visualizing the results, all with a focus on story telling through data, enhancing data literacy. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 . **CC:** SET

ECO 364 - Business Analytics

Course Units: 1.0 This course is about creating business insights from big data. The learning objective is to develop three abilities. The first is the ability to manipulate big data. This includes downloading, merging, appending and reshaping data, and creating new variables. Second is the ability to analyze data. This includes exploratory data analysis, visualization, and sophisticated predictive algorithms including nearest neighbor, naive Bayes, decision trees, regression and others. We will pay special attention to validating our predictions using the train and test regimen. Finally, students will develop an ability to formulate questions that can be answered using big data, and lead to better business performance. This includes using data to improve marketing, pricing, investing capital, customer satisfaction, costs, etc. The data manipulation and analysis will be implemented by writing programs in statistical software. **Prerequisite(s):** ECO 243 (or STA 264) **CC:** SOCS

ENS 215 - Exploring Environmental Data

Course Units: 1.0 Understanding how the Earth and environment works requires the careful analysis and interpretation of scientific data. Increasingly, the limitations to our understanding lie not in the availability of data, but rather in our ability to analyze and find meaning in it. Deriving insight from environmental data, in particular large and complex datasets, requires new tools, methods, and ways of thinking. In this class we are going to learn how to code in the programming language R and use it to analyze environmental data in order to better understand the Earth's systems. This course will feature a hands-on classroom with programming and data analysis occurring interactively during the class. Students will learn how to analyze and visualize large datasets and how to write code, while also covering interesting components of environmental and Earth sciences. **Prerequisite(s):** Any SET or SCLB. **CC:** SCLB, QMR, GDQR **Lecture/Lab Hours** Weekly lab required. **ISP:** ENS

STA 364 - Big Data Analytics

Course Units: 1.0 This course focuses on the analysis of large data sets in diverse application areas using statistical programming languages. Students will develop an understanding of the role of machine learning methods within the context of the scientific method. They will analyze real data sets using downloadable statistical programming packages, including on a course project of their own choosing. This analysis will include exploratory data analysis, visualization, and use of more sophisticated classification and predictive algorithms including nearest neighbor, naïve Bayes, classification and regression trees (CART), neural networks, and others. During the course we will pay special attention to validating models using the "train and test" regimen, as well as through cross validation and bootstrapping. In the process of studying the machine learning methods themselves, students will develop an ability to manipulate big data to accomplish the previous objectives. This includes downloading, merging, appending and reshaping data, and creating new variables. Successful completion of this course would be advantageous for those considering graduate study or employment in the areas of statistics, data science, machine learning, computer science, econometrics, or related disciplines. **Prerequisite(s):** STA 264 or ECO 243 or permission from the Chair. **CC:** JDQR

A data visualization course, at least one of the following (additional courses may be used as electives):

CSC 234 - Data Visualization

Course Units: 1.0 Data has a story which has to be told! Data visualization is all around us, in print and in electronic media. Some of it is accurate and effective, while some is extremely unclear, confusing, or misleading. In this course we will study various approaches to information visualization and associated data analysis techniques. How do we take a lot of data, or very complex data, and present it in ways that allow it to communicate information clearly and effectively? The course will explore applications from science, medicine, social science, and humanities. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 . **CC:** SET

ECO 134 - Data Visualization

Course Units: 1.0 The digital world we live in generates vast amounts of data. This data has the potential to help us understand the world and make better decisions. This course is about representing data using the visual domain. We learn how to turn gigabytes of numbers into pictures and interactive displays. We will use the visual domain not only for communicating insights but also as a means of analysis. We will learn about data structures (how to connect to data), data aggregation (how to summarize data), and principles of design (how humans consume visual content). We will apply these concepts to business and economic data, including sales, financial performance, pricing, etc. The emphasis is on hands-on exercises and creation of new visualizations using data visualization software Tableau. **CC:** SOCS, JDQR **ISP:** STS

Two additional courses:

Minors choose **two** additional courses. Only one course numbered below 100 may count towards the minor. Suggested courses are below. Additional courses may be approved by the minor director. Students may also take an independent study with a faculty member, in consultation with the minor director.

AST 230 - Observational Astronomy

Course Units: 1.0 A laboratory-based course dealing with modern astronomical techniques. The course work will involve primarily nighttime observations with a 20-inch telescope and computer analysis of the data. Techniques covered include CCD observations, sky subtraction, spectroscopy, and photometry. Student projects may include determination of the distances and ages of star clusters; measurements of the variability of stars and of quasars; measurements of the masses of Jupiter, binary star systems, and galaxies; and determination of orbits of asteroids. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 113 or IMP 121 or permission of the instructor (with some telescope experience). **CC:** WAC, WAC-R

AST 240 - Radio Astronomy

Course Units: 1.0 A laboratory-based course in the observing methods and the astrophysics learned from astronomical studies at radio wavelengths. Topics include the operation of a radio telescope; important emission mechanisms; star formation regions; interstellar gas; interstellar molecular clouds; radio galaxies; and the cosmic microwave background. Student projects will involve observations with Union's 2-meter radio telescope and with the 37-meter radio telescope at the Haystack Observatory in Westford, Massachusetts. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 ; Recommended: MTH 115

BIO 324 - Plant Ecology w/lab

Course Units: 1.0 Examines the factors that affect the distribution and abundance of plants including the availability of water or nutrients, interactions with neighboring plants or animals, and the frequency of disturbances such as fires. Topics also include such environmental issues as climate change, exotic species invasions, the conservation of rare species, and the benefits of urban nature for human health. The weekly lab includes field excursions and quantitative data analysis. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 324L **CC:** SCLB, WAC-R, GDQR, GNPS **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 375 - Exercise Physiology

Course Units: 1.0 This course examines how single and repeated bouts of exercise affect the structure and function of tissues, organs, and systems in humans and other animals. Studenta will be performing exercise activities in the lab portion of the course. **Prerequisite(s):** BIO 205 and BIO 206 **CC:** SET **Lecture/Lab Hours** One lab per week.

CHM 240 - Analytical Chemistry

Course Units: 1.0 A course that focuses on the quantitative analysis of samples. Classroom and laboratory emphasis on statistical treatment of data, classical and instrumental methods of chemical analysis, and chemical equilibrium. **Prerequisite(s):** CHM 231 **Corequisite(s):** CHM 240L **CC:** SCLB, WAC-R **Lecture/Lab Hours** Six lab hours each week. **ISP:** ENS

CHN 301 - Advanced Intermediate Chinese 2

Course Units: 1.0 A continuation of CHN 300 **Prerequisite(s):** CHN 300 or permission of instructor. **CC:** LCCC, HUM, WAC **ISP:** AIS

CHN 401 - Media China

Course Units: 1.0 The course is designed for students who have completed three years of Chinese at the college level or the equivalent. Through analysis of more advanced and up-to-date authentic materials from China's mass media, students will not only develop a higher level of Chinese proficiency through class discussions, written compositions, research presentations, but also gain insight into contemporary China, as well as develop strong media literacy skills. Class will be conducted entirely in Chinese. **Prerequisite(s):** CHN 302 or equivalent. Enrollment with consent of the instructor. **CC:** LCCC, HUM, WAC **ISP:** AIS

CLS 156 - The Ancient Economy

Course Units: 1 This class presents an introduction to economies before economics, a study of economic activity in the Greco-Roman world. Ancient Greece and Rome have been called some of the first "global" economies; and using textual sources, archaeology, and techniques from the natural and social sciences, this class will not only look at basic elements of economic activity in the ancient world-demographics, trade, monetization, industry-but also ask critical questions about how-or if-modern economic methods can be applied to the distant past. **CC:** HUM, LCC, SOCS, GCHF, GDQR, GSPE

CLS 193 - History Done Digitally

Course Units: 1 What do you think of when you hear "Humanities"? If you ask someone in the humanities what they study, you may hear a hundred different answers: great authors, established historians, artistic masterpieces. You seldom hear "Data." But that is exactly what all of these works are. In the modern world, countless tools have been developed to facilitate the access, analysis, and dissemination of data. In this course, we will learn how to use various technologies to both ask and answer questions traditional to the humanities and come up with new ones, with a focus on the ancient and medieval world. **Cross-Listed:** HST-140 **CC:** HUM, QMR, GDQR **ISP:** STS

CSC 206 - Text Analytics

Course Units: 1.0 This course introduces computational techniques for extracting information from unstructured text. This includes reading in different types of text, preparing text for further processing, summarizing and visualizing basic descriptive statistics, as well as applications, such as sentiment analysis, information retrieval, information extraction, summarization, and topic modeling. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 **CC:** SET

CSC 233 Intro to Data Analytics
CSC 234 Data Visualization

CSC 235 - Modeling & Simulation

Course Units: 1.0 This course will study modeling and simulation as they occur in and apply to a number of different disciplines. It will cover system dynamics models which address major systems that change with time, and cellular automaton simulations that look more narrowly at individuals affecting individuals. Other topics will include rate of change, errors, simulation techniques, empirical modeling, and an introduction to high performance computing. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 **CC:** SET

CSC 243 - Bioinformatics: Information Technology in the Life Sciences

Course Units: 1.0 Biology and computer science students will gain a working knowledge of the basic principles of the others' discipline, and will collaborate together on bioinformatics projects. Topics include pairwise and multiple sequence alignments, phylogenetic trees, gene expression analysis, and protein structure prediction. Additional topics will be presented by invited speakers. **Cross-Listed:** BIO 243 **Prerequisite(s):** BIO-205 **or** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 ,or CSC 108 . **CC:** SET **ISP:** STS

CSC 321 - Data Mining and Machine Learning

Course Units: 1.0 Introduces Data Mining, where previously unknown and potentially useful information is automatically extracted from data sources, using regularities or patterns of implicit information. Such patterns can be used to make predictions over future data, and be used to explain and understand the nature of that data. Machine Learning is one mechanism by which data mining is achieved. It is used to discover and extract information from raw data. This course will cover tools and techniques of machine learning that are used in practical data mining. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 340 - Introduction to Databases

Course Units: 1.0 Introduction to data models and database design. Coverage of network, hierarchical, and relational architectures with emphasis on the latter. Study of relational algebra, entity-relationship modeling, and data normalization. Study of fourth generation query languages including SQL. Introduction to centralized, distributed, federated, and mediated systems. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

ECE 329 - Neural Networks

Course Units: 1.0 Topics include the biological basic of artificial neural networks, neuron models and architectures, backpropagation, and deep learning models. **Cross-Listed:** CSC 329 **Prerequisite(s):** CSC 151 or CSC 100-level and ECE 240 or permission of the instructor.

ECE 347 - Image Processing

Course Units: 1.0 The course covers the basic operations performed on digital images. These include digitization, image enhancement and restoration, color image processing, and image compression using the discrete cosine transform and wavelets. **Prerequisite(s):** ECE 241 or BME 241 **ISP:** FLM

ECO 156 - Analysis of Ancient Economic Activity

Course Units: 1 This class presents an introduction to economies before economics, a study of economic activity in the Greco-Roman world. Ancient Greece and Rome have been called some of the first "global" economies; and using textual sources, archaeology, and techniques from the natural and social sciences, this class will not only look at basic elements of economic activity in the ancient world-demographics, trade, monetization, industry-but also ask critical questions about how-or if-modern economic methods can be applied to the distant past. **CC:** HUM, LCC, SOCS, GDQR, GSPE

ECO 338 - Quantitative Methods in Economics

Course Units: 1.0 Application of mathematical models in economics. The use of matrix algebra, dynamic analysis, and optimization techniques in economic model building. Topics covered include theories of the consumer and of the firm, economic growth, international trade and finance, optimal timing, linear programming, and macroeconomic models. **Prerequisite(s):** ECO 241 **CC:** SOCS

ECO 353 - Seminar in Econometrics

Course Units: 1.0 Application of econometric methods to economic problems, plus additional topics in econometrics selected from multicollinearity, serially correlated and heteroskedastic disturbance terms, systems of simultaneous equations, seasonal adjustment, distributed lag models, other time series topics. **Prerequisite(s):** ECO 241 or ECO 242 and ECO 243 **CC:** SOCS, WAC-R

ECO 364 Business Analytics

ENS 204 - Geographic Information Systems

Course Units: 1.0 An introduction to Geographic Information Systems (GIS) technology and its practical uses. Topics include history of GIS, geographic data types, primary data structures, system design, map coordinate systems, data sources, metadata, census data, geographic coding and address matching, digitizing, remote sensing imagery, measures of data quality, and needs assessment. An emphasis will be on hands-on instruction using GIS software (ArcView). Students will work with ArcView throughout the term to complete assignments and a class project. Focus areas include archeology, electric and gas utilities, surveying, health and human services, insurance, law enforcement and criminal justice, media and telecommunications, transportation, water and wastewater, and natural resources. The ultimate goal is to use the spatial component of data in conducting analysis and making decisions. **Prerequisite(s):** A good background in the use of modern computer software. **Corequisite(s):** ENS 204L **CC:** SET, GETS **Lecture/Lab Hours** Two class hours and two lab hours weekly. **ISP:** ENS, STS

ENS 215 Exploring Environmental Data

GEO 207 - Stable Isotopes in Environmental Science

Course Units: 1.0 Stable isotopes have become a fundamental tool in many biogeoscientific studies, from reconstructing past climates to tracking animal migration or unraveling foodwebs and even to study the origin of life on Earth and possibly other planets. This course highlights the applications of stable isotopes in biological, ecological, environmental, archeological, and geological studies. Students learn the fundamentals of stable isotope biogeochemistry in order to understand the uses and limitations of this tool. This course starts with an introduction to

the fundamentals of stable isotope geochemistry and then moves on to applied topics such as paleoceanography and paleoclimatology proxies, hydrology, sediments and sedimentary rocks, biogeochemical cycling, the global carbon cycle, photosynthesis, metabolism, ecology, organic matter degradation, pollution, and more. **Prerequisite(s):** Any geosciences, biology, or chemistry course or ENS 100 , or permission of the instructor. **Corequisite(s):** GEO 207L **CC:** WAC, GDQR, GNPS **ISP:** ENS

GEO 209 - Paleoclimatology

Course Units: 1.0 Climate is fundamentally relevant to modern and ancient societies. Global warming is occurring today, and whether it is driven by human activities (e.g., CO2, CH4 emissions) or by natural climate cycles can only be determined by understanding natural climatic variability. Fortunately, there are many tools, and natural climatic records that can provide us with information on past climate (e.g. tree rings, ice cores from glaciers, and sediment cores from lakes and oceans). Obtaining, documenting and interpreting these records is the field of paleoclimatology, and it is the focus of this course. Past climate variability is used to highlight possible scenarios of future climate change. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 209L **CC:** SCLB **ISP:** ENS

GEO 302 - Geochemical Systems and Modeling

Course Units: 1.0 Investigation of the Earth as a chemical system and using chemical tools to understand geologic processes. Topics include origin of the elements, formation and differentiation of the Earth, igneous processes, radioactive isotopes and radiometric dating, and geochemistry of near-surface waters and the oceans. Work includes theory, sample collection, sample preparation, chemical analysis using in-house equipment, and computer modeling of the using the acquired data. Includes readings and discussions of the contemporary geochemical literature. **Prerequisite(s):** CHM 101 or equivalent **Corequisite(s):** GEO 302L **ISP:** ENS

GEO 303 - Earthquakes and the study of the Earth's Interior

Course Units: 1.0 In this course students will learn about the various geophysical methods used to probe the Earth's interior. With a heavy focus on earthquakes and seismology, the course explores the question of how we learn about the Earth beneath our feet. Through the hands-on use of modern geophysical field equipment we will explore the deep and shallow structure of the whole earth. We will learn about finding geological resources and about the physical explanations for plate tectonics. We will also examine how radioactivity and heat flow within the earth can tell us about our warming climate. A common thread throughout the course is computer modeling, data acquisition, signal processing and associated uncertainties. By the end of the course, students will have a familiarity with the differences between the many geophysical surveying methods and the different cases in which they could be employed. **Prerequisite(s):** Any 100-level geosciences or physics course or ENS 100 **Corequisite(s):** GEO 303L **ISP:** ENS

GEO 305 - Global Biogeochemical Cycles

Course Units: 1.0 Biology, geology and chemistry are intricately linked to form the world around us. Biogeochemical cycles set the stage for life on Earth. This course explores the carbon, nitrogen, water, phosphorus, and sulfur cycles in the critical zone and oceans. The critical zone is the terrestrial layer that extends from the bedrock to the top of vegetation, and this course continues into estuaries and the open ocean. We investigate how biological (e.g., primary production, respiration), anthropogenic (e.g., urbanization, pollution) and geological processes (e.g., tectonics, rock weathering) influence the critical zone and oceans, and in turn how these cycles influence life and climate. Field studies focus on tropical marine biogeochemistry of coral reefs, mangrove forests, seagrass meadows, lagoons and estuaries. Course includes a required week-long field trip to a remote field station in Panama. There are additional costs associated with field trip expenses, but students can apply for travel assistance. All students must meet basic term abroad requirements and submit an application. This course is open to all students, but preference will be given to those with a declared major in geosciences, environmental science, chemistry, or biology. **Cross-Listed:** BIO 235 **Corequisite(s):** GEO 305L **Prereq/Corequisite(s):** Take a course from either BIO, CHM, GEO or ENS 100 . **CC:** WAC, WAC-R **ISP:** ENS

HST 140 - History Done Digitally

Course Units: 1 What do you think of when you hear "Humanities"? If you ask someone who works in the humanities what they study, you may hear a hundred different answers: great authors like Chaucer, established historians such as Geoffrey of Monmouth, fantastic works of art such as Myron's Discobolus. You seldom will hear "Data." But that is exactly what all of these great works of literature, history, and art are. Once we make that recognition, a new world opens up. In the modern world, countless tools have been developed to facilitate the access, analysis, and dissemination of data. In this course, we will learn how to use computing technologies (e.g. Voyant Tools, OpenRefine, ArcGIS StoryMaps etc.) to both ask questions that are traditional to the humanities and come up with new questions enabled by the use of these technologies, as well as how technology can make our findings more accessible and understandable. **Cross-Listed:** CLS-193 **CC:** HUM, QMR, SOCS, GDQR

MER 262 - Programming and Writing in ME

Course Units: 1 Project-based sophomore-level course for mechanical engineers that integrates three fundamental skills required for successful mechanical engineering communication: library research, data analysis, and scientific writing. The course teaches searching, interpreting, and communicating mechanical engineering literature. The basics of analyzing large
engineering datasets using MATLAB code are covered, including visualization and numerical differentiation/integration. Conventions of writing in mechanical engineering are practiced through writing assignments based on analysis of large datasets. **Corequisite(s):** MER 201 or MER 231 **CC:** WAC-R

MER 331 - Fluid Mechanics 1

Course Units: 1.0 Analysis of fluid systems according to the control volume formulations of Newton's second law and the conservation laws of mass and energy. Both differential and integral analysis approaches are taught. Includes study of hydrostatics, dimensional analysis, boundary layers, Bernoulli's equation, head loss and piping systems, and lift and drag forces. Includes a laboratory component. **Prerequisite(s):** MER 231, MER 262 ,MTH 117 or IMP 121 **Corequisite(s):** MER 212 and MER 331L **CC:** WAC

MTH 140 - Applied Linear Algebra

Course Units: 1.0 Linear algebra has an enormous number of applications to the sciences and engineering. This course will cover the basics of linear algebra in Euclidean n-space, including linear systems, linear transformations, determinants, eigenvalues and eigenvectors, orthogonality, and the singular value decomposition. An emphasis will be placed on applications, chosen from least-squares fitting, linear programming, image compression, Markov chains and discrete dynamical systems, computer graphics, principal component analysis, the Google PageRank algorithm, and others. Computer software such as MATLAB or Mathematica will be used in this course to perform numerical calculations. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 . **Note:** Credit will not normally be given for both MTH 140 and MTH 340 . Exceptions require approval of a proposal from the student to the department chair.

MTH 340 - Linear Algebra

Course Units: 1.0 Vector spaces, linear transformations, inner product and dual spaces, eigenvalues and eigenvectors, special topics. **Prerequisite(s):** One of MTH 115, MTH 115H or IMP 121 and one of MTH 219, MTH 221, MTH 224, MTH 228 , MTH 235, MTH 248 , or permission from the Chair. **Note:** Credit will not normally be given for both MTH 140 and MTH 340. Exceptions require approval of a proposal from the student to the department chair.

MLT 209 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** ENS 222 **CC:** LCC, SET, HUL, HUM, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

PHY 122 - Relativity, Quantum, and Their Applications

Course Units: 1.0 Calculus-based introduction to the structure of matter, including quantum effects, particle, nuclear, atomic, molecular, and solid state physics, and applications to materials of interest to engineers and scientists. **Prerequisite(s):** PHY 121 IMP 113 or IMP 121 . **Corequisite(s):** PHY-122L **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

PHY 123 - Heat and Light

Course Units: 1.0 Calculus-based introduction to thermodynamics, geometric and physical optics, and astrophysics. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 121 or IMP 121 . **CC:** ENS

PHY 300 - Methods of Modern Experimental Physics

Course Units: 1.0 A laboratory-based course dealing with contemporary techniques in experimental physics. **Prerequisite(s):** PHY 122 and one physics course at the 200-level or higher, or permission of the instructor. **CC:** WAC **ISP:** ENS

PHY 310 - Advanced Topics in Physics 1

Course Units: 1.0 Course topic for each year to be chosen from the following: Computational Physics: A laboratory-based course providing practical tools to solve computational physics problems drawn from a wide range of areas, including classical mechanics, electromagnetism, special relativity, and quantum mechanics. Algorithms include root-finders, integration techniques, Monte Carlo methods, ordinary and partial differential equation solvers, numerical Fourier transforms, minimization tools, and numerical linear algebra algorithms. Condensed Matter Physics: An introduction to the microscopic structures and to the electrical and thermal properties of metals, insulators, and semiconductors. Topics include the description of crystal lattices, electrons in a periodic potential, electronic band theory, phonons and their interactions with electrons, cohesive energy of solids, defect states, and superconductivity. Modern Physical Optics: Interference, diffraction and polarization of light, interaction of light and matter, classical and quantum description of optics, and lasers. Three-hour lab each week. Nuclear/Elementary Particle Physics: An introduction to both nuclear and particle physics covering basic nuclear structure and properties, nuclear models, nuclear decay and radioactivity, nuclear reactions, fission, fusion, accelerators, elementary particle physics, and the quark model. Statistical Mechanics: Probability theory, laws of thermodynamics, kinetic theory of gases and the statistical basis of thermodynamics, Bose Einstein and Fermi Dirac distributions, applications to simple fluids, magnetic systems, metals, photons, and superfluid helium. Advanced Electromagnetism: Relativistic electrodynamics, electromagnetic radiation and waves. Quantum Optics: The study of the interaction of light and matter in systems where the wave nature of matter and the particle nature of light must be taken into account. Topics may include single-photon interference, correlated photons and the EPR paradox, quantum computing, quantum cryptography and quantum teleportation, atom optics and atom interferometry, laser cooling and Bose-Einstein Condensation, and implications of quantum mechanics for nanomaterials and nanodevices. Electronics: A laboratory course in basic electronics and instrumentation for science majors. Topics include AC and DC circuits, diodes, rectifiers, transistors, operational amplifiers, binary logic, Boolean algebra, digital circuits, analog-digital conversion, transducers, and computer interfacing. Six hours of lab each week. Others depending upon student interest. **Prerequisite(s):** Course open to juniors and seniors only. Enrollment by permission of the instructor. **ISP:** ENS

PSC 123 - Topics in Mathematical Political Science

Course Units: 1.0 A mathematical treatment (not involving calculus or statistics) of escalation, political power, social choice, and international conflict. **Cross-Listed:** MTH 060 **Prerequisite(s):** No previous study of political science is necessary, but PSC 111 or PSC 112 would be relevant. **CC:** QMR, SOCS **ISP:** STS

PSY 300 - Research Methods in Psychology

Course Units: 1.0 Students will learn how to conduct research in psychological science, including hypothesis development, research design, data collection, scientific writing, ethical considerations, and dissemination. Students will also learn how to conduct statistical analyses using the SPSS software package, to include regression as well as analysis of within-participant and factorial designs. In the capstone assignment, students will develop their own hypotheses and design their own psychological experiments with which to test those hypotheses. **Prerequisite(s):** PSY 200 with a grade of C- or better; students who earned a B-plus or better in STA 104 , STA 164 , or ECO 243 are also eligible to enroll in PSY 300; students who earned a 4 or 5 in Statistics AP are eligible to enroll in PSY 300. **Corequisite(s):** PSY 300L **CC:** WAC, WAC-R **Lecture/Lab Hours** One lab per week.

STA 264 - Regression Analysis

Course Units: 1.0 Regression analysis is one of the most important and influential methods in statistics, finding application in virtually all disciplines, from business to healthcare to sociology to the hard sciences. This course will cover both the science of regression analysis - its underlying mathematical theory, as well as the art of its practical application. The course project will involve development of a regression model to fit a real data set. Lectures will be given primarily in matrix notation, i.e., using linear algebra. While the course will not be all-encompassing in itself due to time constraints, it would be good preparation for more advanced modeling courses involving data mining, machine learning, "Big Data", and so on. Prior understanding of statistical concepts is assumed **Prerequisite(s):** MTH 115 and one of STA 104 , ECO 243, STA 164 , PSY 200, MER 301 or permission from the Chair. **ISP:** ENS

STA 364 Big Data Analytics

Digital Media

Directors: Associate Professors L. Cox (Visual Arts), K. Striegnitz (Computer Science)

Digital Media Minor

Requirements for the Minor:

The digital media minor allows students to synthesize introductory and intermediate classes from computer science and visual arts that explore the interaction between creative and computational processes. These include basic courses in digital art, traditional studio art, web programming and programming for image and sound processing. Students will explore a range of visual and electronic applications, and learn the basic tools necessary to incorporate visualization mechanisms into work within other fields of study. Requires the following six courses, three from computer science and three from visual arts:

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area, focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages.

Prereq/Corequisite(s): A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 234 - Data Visualization

Course Units: 1.0 Data has a story which has to be told! Data visualization is all around us, in print and in electronic media. Some of it is accurate and effective, while some is extremely unclear, confusing, or misleading. In this course we will study various approaches to information visualization and associated data analysis techniques. How do we take a lot of data, or very complex data, and present it in ways that allow it to communicate information clearly and effectively? The course will explore applications from science, medicine, social science, and humanities. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 . **CC:** SET

CSC 240 - Web Programming

Course Units: 1.0 This course addresses the standards in programming applications for the Web. It covers the client-side technologies HTML, CSS, and JavaScript as well as server-side technologies PHP and MySQL. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 **CC:** SET **ISP:** STS

CSC 245 - The Computer Science of Computer Games

Course Units: 1.0 This course surveys the field of computer science from the perspective of computer games. Topics explored include: rendering of graphics to a screen, implementation of realistic simulation, use of artificial intelligence in games, handling user input, game physics, collaborative development. Final course project is a complete computer game. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 . **CC:** SET **ISP:** STS

- An additional CS course numbered above 110, chosen in consultation with the minor advisor.

AVA 160 - Digital Art

Course Units: 1.0 This introductory course focuses on the fundamentals of using the computer as an art tool in the production of two-dimensional content. Topics covered include essentials of digital imaging, digital printing, and posting information to the Internet. Class lectures and hands-on studio will incorporate technique demonstrations, discussions, technical exploration, aesthetic inquiry and historical information relevant to computer multimedia, hypermedia and telecommunications. Students are encouraged to pursue areas of interest and explore new ideas throughout the course. Outside work required. No previous experience necessary. **CC:** HUM **ISP:** FLM

AVA 262 - Real and Recorded Time - 4D Art

Course Units: 1.0 This course will serve as an introduction to the basic concepts of four-dimensional art or time-based artwork, using a variety of processes and media. Students explore concepts in animation techniques, video and audio production, editing, interactivity, installation, and documentation. Class lectures and hands-on studio time will incorporate technique demonstrations, screenings, readings, discussions, technical exploration, aesthetic inquiry and historical information relevant to the course. Outside work is required. **Prerequisite(s):** Any Studio Art course or permission of instructor. **CC:** HUM **ISP:** FLM

- One non-Digital Visual Arts studio course, chosen in consultation with the minor advisor or AMU 140.

Exceptions:

- Courses cross-listed in both CSC and AVA do not count towards this minor.
- A Computer Science major wishing to achieve this minor may not count the introductory CS course towards it. Instead, the student must take any fourth course in Visual Arts (Visual Arts Studio or Art History course), chosen in consultation with the minor advisor.
- A Visual Arts major wishing to achieve this minor must take a fourth CS course numbered above 110, chosen in consultation with the minor advisor.
- A CS-Art interdepartmental major is not eligible for this minor

Economics

Chair: Professor Younghwan Song
Faculty: Professors L. Davis, T. Dvorak, B. Lewis, E. Motahar, S. Schmidt, M.F. Sener, Y. Song; Associae Professor K. Raeburn; Assistant Professors P. Arora, D. Cheng, H. Dang, Z. Rodriguez; Visiting Assistant Professors C. Abraham, M. Arora, D. Garrido,
Staff: M. Kenneally (Administrative Assistant)

Prerequisites: ECO 101 is a prerequisite for all courses in the department, unless otherwise indicated.

Note on 300 and 400-level courses: 300 and 400-level courses carry one or more of the core courses ECO 241 , ECO 242 , or ECO 243 as prerequisites.

Economics (ID), B.A.

Requirements for the Interdepartmental Major in Economics:

Interdepartmental majors

Interdepartmental majors in economics and another field are required to take at least eight courses in economics, including

ECO 101 - Introduction to Economics

Course Units: 1.0 Basic microeconomic model of price determination; impact of market structure on price and output decisions by firms; role of the public sector in an economy; basic macroeconomic model of national income determination; impact of fiscal and monetary policies on employment levels, price stability, and economic growth; international economic relationships. **CC:** SOCS

ECO 241 - Microeconomic Analysis

Course Units: 1.0 **(TBD: Staff)** Theory of consumer choice; principles of production and analysis of cost phenomena; pricing and output decisions in competitive and noncompetitive markets; theory of distribution; general equilibrium analysis; introduction to welfare economics. **Prerequisite(s):** ECO 101 and, MTH 105 , MTH 110 or MTH 113 **Prereq/Corequisite(s):** A minimum grade of C in ECO-241 is required to register for ECO 498 **CC:** SOCS

ECO 242 - Macroeconomic Theory and Policy

Course Units: 1.0 Aggregate demand theory. Foundations of aggregate consumption, investment, money demand and money supply. Aggregate supply theory. Keynesian, monetarist, and rational expectations models. Economic growth

theory. Unemployment, inflation and stabilization policy. **Prerequisite(s):** ECO 101 and, MTH 105 , MTH 110 , or MTH 113 **Prereq/Corequisite(s):** A minimum grade of C in ECO-242 is required to register for ECO 498 **CC:** SOCS

ECO 243 - Introduction to Econometrics

Course Units: 1.0 Descriptive statistics, probability, random variables and their distributions, sampling, statistical inference including confidence interval estimation, hypothesis testing, and regression analysis. Introduction to economic research using statistical methods to test theories. **Prerequisite(s):** ECO 101 **Prereq/Corequisite(s):** A minimum grade of C in ECO-243 is required to register for ECO 498 **CC:** SOCS **ISP:** ENS

- at least one *seminar course
- 1 Economics Elective

and either

ECO 498 - Economics Senior Thesis 1

Course Units: 0.0 Independent research thesis. **Prerequisite(s):** A minimum grade of C in each of the courses in the core sequence of ECO 241 , ECO 242 , ECO 243 , at least one course in the area of the thesis and senior standing; ECO 498 is prerequisite to ECO 499 . **CC:** WS

ECO 499 - Economics Senior Thesis 2

Course Units: 2.0 Independent research thesis. **Prerequisite(s):** A minimum grade of C in each of the courses in the core sequence of ECO 241 , ECO 242 , ECO 243 , at least one course in the area of the thesis and senior standing; ECO 498 is prerequisite to ECO 499. **CC:** WS

- a senior thesis drawing on both economics and the other discipline.
  ECO 390 may not be counted as a 300-level course to satisfy these requirements.

Additional Requirements

Majors and Interdepartmental majors should normally complete the core sequence of ECO 241, ECO 242, and ECO 243 by the beginning of the junior year. This will allow sufficient time to take upper-level courses prior to the senior thesis. Majors and Interdepartmental majors who have reached the junior year may not enroll in courses numbered below 240, except 100-level Economics electives. Students may count at most one100-level Economics elective toward the major. Also, students may not count toward the major more than one internship-related course.

Majors and Interdepartmental majors must have a minimum grade of C in each of the courses in the core sequence of ECO 241, ECO 242, and ECO 243 before taking ECO 498 - ECO 499, IDM 487 - IDM 488 or IDM 498 - IDM 499 with Economics as one component. Students receiving a grade lower than C in any of the core sequence of ECO 241, ECO 242, and ECO 243 may repeat the core course only once.

Majors and Interdepartmental majors taking ECO 498-ECO 499, IDM 487-IDM 488, or IDM 498-IDM 499 with Economics as one component, must pass an oral defense of their senior thesis proposal before enrolling in ECO 499 or IDM 499.

Students interested in economics might also consider a major in Managerial Economics. Students planning graduate study in economics or business are advised to take additional courses in mathematics as their advisors recommend.

Requirements for Honors in Economics:

Departmental honors require that a student enroll in and successfully complete the Honors Program. The eligibility requirements for the honors program in economics are, in addition to the college-wide requirements, (1) a minimum grade average of 3.3 in Economics 241, 242, and 243, (2) a minimum grade of "A minus" on the senior thesis; and (3) a presentation of their work. Fall-Winter students will present in the Economics Honors Poster Session winter term, and Winter-Spring students will present their work at the Steinmetz Symposium in the Spring term, as either a poster or an oral presentation. Fall-Winter thesis students are also encouraged to participate in the Steinmetz Symposium.

Course Selection Guidelines

Course Sequence: Students intending to major in economics should take ECO 101 in the first year, and complete MTH 105, MTH 110, or MTH 113 in the first year, or early in the sophomore year. They should also take one or more 200-level electives in the first or second year, since these courses are not open to junior and senior majors. In the sophomore year they should take the core ECO 241, ECO 242, ECO 243 sequence; the sequence need not be taken in numerical order but ECO 243 should normally not be taken first. Majors should complete several 300-level elective courses as juniors prior to enrolling in a senior thesis, including, where possible courses in the area of economics in which the thesis will be written.

Placement: The economics department gives credit for ECO 101 to students receiving a score of 5, 6, or 7 on the Higher Level International Baccalaureate exam, a grade of A or B on the economics A-levels, and a score of 4 or 5 on both the AP Microeconomics and Macroeconomics exams, but does not give credit for ECO 101 to students who have taken only one of the two AP exams, regardless of the score received.

Prerequisites: ECO 101 is a prerequisite for all courses in the department, unless otherwise indicated.

Economics Minor

Requirements for the Minor:

Six economics courses including:

ECO 101 - Introduction to Economics

Course Units: 1.0 Basic microeconomic model of price determination; impact of market structure on price and output decisions by firms; role of the public sector in an economy; basic macroeconomic model of national income determination; impact of fiscal and monetary policies on employment levels, price stability, and economic growth; international economic relationships. **CC:** SOCS

ECO 241 - Microeconomic Analysis

Course Units: 1.0 **(TBD: Staff)** Theory of consumer choice; principles of production and analysis of cost phenomena; pricing and output decisions in competitive and noncompetitive markets; theory of distribution; general equilibrium analysis; introduction to welfare economics. **Prerequisite(s):** ECO 101 and, MTH 105 , MTH 110 or MTH 113 **Prereq/Corequisite(s):** A minimum grade of C in ECO-241 is required to register for ECO 498 **CC:** SOCS

ECO 242 - Macroeconomic Theory and Policy

Course Units: 1.0 Aggregate demand theory. Foundations of aggregate consumption, investment, money demand and money supply. Aggregate supply theory. Keynesian, monetarist, and rational expectations models. Economic growth theory. Unemployment, inflation and stabilization policy. **Prerequisite(s):** ECO 101 and, MTH 105 , MTH 110 , or MTH 113 **Prereq/Corequisite(s):** A minimum grade of C in ECO-242 is required to register for ECO 498 **CC:** SOCS

ECO 243 - Introduction to Econometrics

Course Units: 1.0 Descriptive statistics, probability, random variables and their distributions, sampling, statistical inference including confidence interval estimation, hypothesis testing, and regression analysis. Introduction to economic research using statistical methods to test theories. **Prerequisite(s):** ECO 101 **Prereq/Corequisite(s):** A minimum grade of C in ECO-243 is required to register for ECO 498 **CC:** SOCS **ISP:** ENS

(unless waived by the department chair based on an equivalent course in the student's major. The requirement can be waived for Economics minors who passed STA 264, MER 301, or PSY 200)

and

- at least one course at the 300 or 400-level

Additional notes:

Economics minor does not have a minimum grade of C requirement for the core sequence ECO 241, ECO 242 and ECO 243.

Economics, B.A.

Requirements for the Major in Economics:

Twelve courses in the department:

ECO 101 - Introduction to Economics

Course Units: 1.0 Basic microeconomic model of price determination; impact of market structure on price and output decisions by firms; role of the public sector in an economy; basic macroeconomic model of national income determination; impact of fiscal and monetary policies on employment levels, price stability, and economic growth; international economic relationships. **CC:** SOCS

ECO 241 - Microeconomic Analysis

Course Units: 1.0 **(TBD: Staff)** Theory of consumer choice; principles of production and analysis of cost phenomena; pricing and output decisions in competitive and noncompetitive markets; theory of distribution; general equilibrium analysis; introduction to welfare economics. **Prerequisite(s):** ECO 101 and, MTH 105 , MTH 110 or MTH 113 **Prereq/Corequisite(s):** A minimum grade of C in ECO-241 is required to register for ECO 498 **CC:** SOCS

ECO 242 - Macroeconomic Theory and Policy

Course Units: 1.0 Aggregate demand theory. Foundations of aggregate consumption, investment, money demand and money supply. Aggregate supply theory. Keynesian, monetarist, and rational expectations models. Economic growth theory. Unemployment, inflation and stabilization policy. **Prerequisite(s):** ECO 101 and, MTH 105 , MTH 110 , or MTH 113 **Prereq/Corequisite(s):** A minimum grade of C in ECO-242 is required to register for ECO 498 **CC:** SOCS

ECO 243 - Introduction to Econometrics

Course Units: 1.0 Descriptive statistics, probability, random variables and their distributions, sampling, statistical inference including confidence interval estimation, hypothesis testing, and regression analysis. Introduction to economic research using statistical methods to test theories. **Prerequisite(s):** ECO 101 **Prereq/Corequisite(s):** A minimum grade of C in ECO-243 is required to register for ECO 498 **CC:** SOCS **ISP:** ENS

ECO 498 - Economics Senior Thesis 1

Course Units: 0.0 Independent research thesis. **Prerequisite(s):** A minimum grade of C in each of the courses in the core sequence of ECO 241 , ECO 242 , ECO 243 , at least one course in the area of the thesis and senior standing; ECO 498 is prerequisite to ECO 499 . **CC:** WS

ECO 499 - Economics Senior Thesis 2

Course Units: 2.0 Independent research thesis. **Prerequisite(s):** A minimum grade of C in each of the courses in the core sequence of ECO 241 , ECO 242 , ECO 243 , at least one course in the area of the thesis and senior standing; ECO 498 is prerequisite to ECO 499. **CC:** WS

and

- six others

  Majors are required to take a minimum of three 300 or 400-level courses in the department (in addition to ECO 498 and ECO 499). ECO 390 may not be counted as a 300-level course to satisfy these requirements. Students may count at most one 100-level Economics elective toward the major.

  Majors are required to take a seminar course as one of their three 300-level electives. The seminar course must be from one of the economics courses listed on the course catalogue with the word "seminar" in its title. Students cannot petition to have courses taken on terms abroad or at other institutions substitute for the seminar course.

Completion of

MTH 105 - Differential Calculus with Precalculus

Course Units: 1.0 Differential calculus of functions of a single variable, supplemented with supporting precalculus. Limits, continuity, differentiation, and applications. **CC:** QMR **ISP:** ENS **Note:** Not intended for students with credits for MTH 059 ,MTH 110 , MTH 113 , MTH 110P or MTH 113P.

or

MTH 110 - Calculus 1: Differential Calculus

Course Units: 1.0 Differential calculus of functions of a single variable. Limits, continuity, differentiation, computational aspects of Maclaurin and Taylor polynomials and series, and applications. **Note:** Not intended for students who have passed MTH 059 ,MTH 105 , MTH 113 , MTH 110P, or MTH 113P. **CC:** QMR **ISP:** ENS

or

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

(or equivalent advanced placement credit) is required prior to enrolling in ECO 241 or ECO 242

Additional Requirements

Majors and Interdepartmental majors should normally complete the core sequence of ECO 241, ECO 242, and ECO 243 by the beginning of the junior year. This will allow sufficient time to take upper-level courses prior to the senior thesis. Majors and Interdepartmental majors who have reached the junior year may not enroll in courses numbered below 240, except 100-level Economics electives. Students may count at most one100-level Economics elective toward the major. Also, students may not count toward the major more than one internship-related course.

Majors and Interdepartmental majors must have a minimum grade of C in each of the courses in the core sequence of ECO 241, ECO 242, and ECO 243 before taking ECO 498 - ECO 499, IDM 487 - IDM 488 or IDM 498 - IDM 499 with Economics as one component. Students receiving a grade lower than C in any of the core sequence of ECO 241, ECO 242, and ECO 243 may repeat the core course only once.

Majors and Interdepartmental majors taking ECO 498-ECO 499, IDM 487-IDM 488, or IDM 498-IDM 499 with Economics as one component, must pass an oral defense of their senior thesis proposal before enrolling in ECO 499 or IDM 499.

Students interested in economics might also consider a major in Managerial Economics. Students planning graduate study in economics or business are advised to take additional courses in mathematics as their advisors recommend.

Requirements for Honors in Economics:

Departmental honors require that a student enroll in and successfully complete the Honors Program. The eligibility requirements for the honors program in economics are, in addition to the college-wide requirements, (1) a minimum grade average of 3.3 in Economics 241, 242, and 243, (2) a minimum grade of "A minus" on the senior thesis; and (3) a presentation of their work. Fall-Winter students will present in the Economics Honors Poster Session winter term, and Winter-Spring students will present their work at the Steinmetz Symposium in the Spring term, as either a poster or an oral presentation. Fall-Winter thesis students are also encouraged to participate in the Steinmetz Symposium.

Course Selection Guidelines

Course Sequence: Students intending to major in economics should take ECO 101 in the first year, and complete MTH 105, MTH 110, or MTH 113 in the first year, or early in the sophomore year. They should also take one or more 200-level electives in the first or second year, since these courses are not open to junior and senior majors. In the sophomore year they should take the core ECO 241, ECO 242, ECO 243 sequence; the sequence need not be taken in numerical order but ECO 243 should normally not be taken first. Majors should complete several 300-level elective courses as juniors prior to enrolling in a senior thesis, including, where possible courses in the area of economics in which the thesis will be written.

Placement: The economics department gives credit for ECO 101 to students receiving a score of 5, 6, or 7 on the Higher Level International Baccalaureate exam, a grade of A or B on the economics A-levels, and a score of 4 or 5 on both the AP Microeconomics and Macroeconomics exams, but does not give credit for ECO 101 to students who have taken only one of the two AP exams, regardless of the score received.

Prerequisites: ECO 101 is a prerequisite for all courses in the department, unless otherwise indicated.

Economics, Managerial Economics, B.A.

- See Managerial Economics, B.A.

Electrical Engineering

Department Chair: Associate Professor J. Currey, Associate Chair: Associate Professor T. Buma
Faculty: Professors L. Dosiek, C. Traver; Associate Professors T. Buma, S. Cotter, H. Hanson; Assistant Professors M. Okwori, C. Pappu; Visiting Assistant Professor M. Momota; Senior Lecturer J. Hedrick
Staff: G. Davison (Engineering Assistant), L. Galeo (Administrative Assistant)

The Electrical Engineering program provides students with a solid basis in electrical engineering and its underlying mathematics and science within the framework of a liberal arts education. We prepare students for immediate professional employment, graduate study, and entry into related professions. We believe that the rigor and depth of an electrical engineering education combined with a broad study of the liberal arts provides an excellent background for students who wish to enter professions such as medicine, law, and business administration as well as engineering itself. Through our study abroad opportunities, our emphasis on undergraduate research, our flexible curriculum, and the personal attention that we give to each student, we educate well-rounded members of society who are prepared to excel in an increasingly multicultural and technological world.

The Electrical Engineering program is offered by the Electrical, Computer and Biomedical Engineering department, and is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Educational objectives and student outcomes are listed on the department website.

Electrical Engineering Minor

Requirements for the Minor:

ECE 118 - Introduction to Computer and Logic Design

Course Units: 1.0 Fundamental material in the area of digital logic circuit analysis and synthesis, and computer organization. The components of digital computers are studied at the gate level, the function level, and the machine organization level. Weekly laboratory exercises are required. **Cross-Listed:** CSC 118 **Corequisite(s):** ECE 118L **CC:** SET

ECE 225 - Electric Circuits

Course Units: 1.0 Basic electrical circuit concepts and devices such as Ohm's law, Kirchhoff's laws, Thevenin and Norton equivalents, operational amplifiers, analysis methods, capacitors, inductors, ideal transformers, phasors, AC steady state analysis, complex power, frequency response and filters. Includes a weekly lab. Not open to Mechanical Engineering major **Cross-Listed:** BME 225 **Prerequisite(s):** MTH 112 or MTH 113 **Corequisite(s):** ECE 225L

ECE 240 - Circuits and Systems

Course Units: 1.0 Transient analysis of RLC circuits; modeling of circuits using differential equations; system models and properties; Laplace transforms applied to circuit and system design and analysis; system functions; complex frequency; poles and zeros; stability; frequency response; filter design. Includes a weekly lab. Not open to Mechanical Engineering majors **Cross-Listed:** BME 240 **Prerequisite(s):** ECE 225 or BME 225 **Corequisite(s):** ECE 240L **CC:** WAC

ECE 248 - Introduction to Semiconductor Devices and Circuits

Course Units: 1.0 Semiconductors: theory of operation of diodes and transistors; circuit models; basic electronic circuits and amplifiers: transfer characteristics and inverters. Includes a weekly lab. **Prerequisite(s):** ECE 225 or BME 225 **Corequisite(s):** ECE 248L

- Two ECE electives numbered 100 or higher

  Students interested in an alternative sequence of ECBE courses must obtain prior approval from the ECBE department chair. Due to significant curricular overlap, Computer Engineering majors are not allowed to minor in Electrical Engineering.

Electrical Engineering, B.S.

Requirements for the Major:

A total of 40 courses including the following:

Math and Science:

Select One Calculus Sequence

Sequence One

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

Sequence Two

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

IMP 120 - Integrated Math/Physics

Course Units: 2.0 An introductory team-taught, two-term-long sequence of integrated courses, two in mathematics and two in physics, roughly spanning the content of MTH 115 , MTH 117 , PHY 120 and PHY 121 . Designed for engineering students as well as other interested students. **Prerequisite(s):** MTH 113 , by invitation. **CC:** QMR, SCLB, GNPS **ISP:** ENS

IMP 121 - Integrated Math/Physics

Course Units: 2.0 An introductory team-taught, two-term-long sequence of integrated courses, two in mathematics and two in physics, roughly spanning the content of MTH 115 , MTH 117 , PHY 120 and PHY 121 . Designed for engineering students as well as other interested students. **Prerequisite(s):** IMP 120 **CC:** QMR, SCLB **ISP:** ENS

Sequence Three

MTH 110 - Calculus 1: Differential Calculus

Course Units: 1.0 Differential calculus of functions of a single variable. Limits, continuity, differentiation, computational aspects of Maclaurin and Taylor polynomials and series, and applications. **Note:** Not intended for students who have passed MTH 059 ,MTH 105 , MTH 113 , MTH 110P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

Sequence Four

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

MTH 105 - Differential Calculus with Precalculus

Course Units: 1.0 Differential calculus of functions of a single variable, supplemented with supporting precalculus. Limits, continuity, differentiation, and applications. **CC:** QMR **ISP:** ENS **Note:** Not intended for students with credits for MTH 059 ,MTH 110 , MTH 113 , MTH 110P or MTH 113P.

Additional Requirements

MTH 130 - Ordinary Differential Equations

Course Units: 1.0 Topics include first and second-order differential equations and first-order systems, including analytic, geometric, and numerical techniques, classification of first-order linear systems by eigenvalues, forcing and resonance, and the Laplace transform. Applications include but are not limited to population models, RC circuits, and damped and undamped harmonic oscillators. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 **Note:** Not open to students who have passed MTH 234 . **CC:** GDQR

or

MTH 234 - Differential Equations

Course Units: 1.0 Topics include differential equations and models, asymptotic solutions, eigenvalues and eigenvectors, classification of planar systems, higher-dimensional linear algebra, canonical form, linear and nonlinear systems, and applications. **Prerequisite(s):** MTH 115 and MTH 199, or permission from the Chair. **Prereq/Corequisite(s):** Not open to students who have passed MTH 130. **CC:** GDQR

One natural science elective numbered 100 or higher: any course (may or may not include a laboratory component) at level 100 or higher in Chemistry, Physics, Astronomy, Biology, Geosciences, or ENS 100 (ENS courses other than 100 do not satisfy this requirement).

This major requirement is distinct from the Common Curriculum Natural Science with Laboratory requirement (which engineering majors satisfy by taking PHY 120).

One Math or Science elective numbered 100 or higher (if a science elective is chosen, it must meet the same requirements as outlined for the natural science elective above).

Engineering and Computer Science:

ESC 100 - Exploring Engineering

Course Units: 1.0 An introduction to engineering including fundamental topics core to engineering. The course includes a weekly design studio that emphasizes engineering design, teamwork, technical writing and ethics through several individual and team design projects. Not available to junior or senior engineering students. **Corequisite(s):** ESC 100L **CC:** SET, GETS **ISP:** STS **Note:** General engineering course common to more than one program.

One from

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 104 - Robots Rule! Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a robotics theme. Introduces students to algorithms, basic data structures, and programming techniques. Students will build and program robots, exploring

mobility, navigation, sensing, and inter-robot communication. Additional class topics include: history of robotics, social and ethical issues, emotionally intelligent behavior and other current topics in robotics. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 105 - Game Development: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a computer games theme. Introduces students to algorithms, basic data structures, and programming techniques. Computer game development is used as an example application area and students implement their own games throughout the course. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area, focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 108 - Scientific Computing: Introduction to Computer Science

Course Units: 1.0 Computers are used as tools in analyzing and solving scientific problems as well as being embedded in many applications and experimental equipment used by today's scientists. This course is designed to introduce students to computer programming and problem solving through the use of Python. Python is a language commonly used by the scientific community, and we will focus on using it to address scientific problems, using extensions that facilitate scientific computing. CC: QMR, SET Note: A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

Electrical Engineering Core:

ECE 101 - The Joy of Electronics

Course Units: 1.0 Introduction to the tools, skills, and principles of electrical and computer engineering. Emphasis is placed on developing an intuitive understanding while learning quantitative methods to design, test, and analyze electronics. Test and measurement tools include oscilloscopes, multimeters, and function generators. Circuit construction techniques include breadboarding and soldering as well as computer software to simulate circuits.

Principles such as power, frequency, and modulation are taught through analog and digital electronics projects. Hands-on projects include an audio amplifier, crystal radio receiver, digital clock, and a microcontroller-operated robotic arm. **CC:** SET **Note:** Not open to students who have taken ECE 222 or ECE 225

ECE 118 - Introduction to Computer and Logic Design

Course Units: 1.0 Fundamental material in the area of digital logic circuit analysis and synthesis, and computer organization. The components of digital computers are studied at the gate level, the function level, and the machine organization level. Weekly laboratory exercises are required. **Cross-Listed:** CSC 118 **Corequisite(s):** ECE 118L **CC:** SET

ECE 218 - Embedded Microcontroller Projects

Course Units: 1.0 Focuses on the design and implementation of microcontroller systems. Topics include microcontroller architecture, interfacing, programming for control applications, multitasking, and tools used in embedded system design. The course includes a weekly project-based laboratory. **Prerequisite(s):** ECE 118 and one course from the following: CSC 103, CSC 104, CSC 105, CSC 106, CSC 107, or CSC 108 **Corequisite(s):** ECE 218L **CC:** SET

ECE 225 - Electric Circuits

Course Units: 1.0 Basic electrical circuit concepts and devices such as Ohm's law, Kirchhoff's laws, Thevenin and Norton equivalents, operational amplifiers, analysis methods, capacitors, inductors, ideal transformers, phasors, AC steady state analysis, complex power, frequency response and filters. Includes a weekly lab. Not open to Mechanical Engineering major **Cross-Listed:** BME 225 **Prerequisite(s):** MTH 112 or MTH 113 **Corequisite(s):** ECE 225L

ECE 240 - Circuits and Systems

Course Units: 1.0 Transient analysis of RLC circuits; modeling of circuits using differential equations; system models and properties; Laplace transforms applied to circuit and system design and analysis; system functions; complex frequency; poles and zeros; stability; frequency response; filter design. Includes a weekly lab. Not open to Mechanical Engineering majors **Cross-Listed:** BME 240 **Prerequisite(s):** ECE 225 or BME 225 **Corequisite(s):** ECE 240L **CC:** WAC

ECE 241 - Discrete Systems

Course Units: 1.0 Discrete signals and systems; classification and properties of systems; difference equations; Z-transform; Fourier series, Fourier transforms, the DFT and FFT; filters and filter design; A/D and D/A converters; applications to audio signal processing. Includes a weekly lab. **Cross-Listed:** BME 241 **Prerequisite(s):** ECE 240 or BME 240 **Corequisite(s):** ECE 241L **CC:** WAC **ISP:** FLM

ECE 248 - Introduction to Semiconductor Devices and Circuits

Course Units: 1.0 Semiconductors: theory of operation of diodes and transistors; circuit models; basic electronic circuits and amplifiers: transfer characteristics and inverters. Includes a weekly lab. **Prerequisite(s):** ECE 225 or BME 225 **Corequisite(s):** ECE 248L

ECE 343 - Introduction to Electromagnetic Engineering

Course Units: 1.0 Traveling waves: transmission lines; electrostatics; magnetostatics; applications to engineering problems; solutions by analytical and numerical techniques. **Prerequisite(s):** ECE 240, (MTH 117 and PHY 121) or IMP 120 **Corequisite(s):** ECE 343L **Lecture/Lab Hours** One lab per week.

ECE 350 - Communication Systems

Course Units: 1.0 Frequency domain analysis, signal space representations, and their application to wireless communications; quality measures; performance in the presence of noise. Includes a weekly lab. **Prerequisite(s):** ECE 241 **Corequisite(s):** ECE 350L

ECE 351 - Probability and Digital Communications

Course Units: 1.0 An introduction to probability with an emphasis on applications in digital communications. Digital signaling, coding, probability of error, matched filters, optimum receiver design, source entropy, channel capacity. **Prerequisite(s):** ECE 118, ECE 240

ECE 363 - Analysis and Design of Electronic Circuits

Course Units: 1.0 Multiple-stage amplifiers; Differential amplifiers; Frequency response of amplifiers; Feedback amplifier; Stability of electronic circuits; Analysis and design of operational amplifiers. **Prerequisite(s):** ECE 248 **Corequisite(s):** ECE 363L **Lecture/Lab Hours** Weekly lab

ECE 366 - Control Systems

Course Units: 1.0 Modeling of control systems by block diagrams and flow graphs. Analysis of control systems response, error and stability, Root-Locus method, and frequency domain methods (Nyquist, Bode, and Nichols). **Prerequisite(s):** ECE 240 **Corequisite(s):** ECE 366L **Lecture/Lab Hours** One lab per week.

Electrical Engineering Electives:

Three additional ECE courses numbered 300 or higher.

Capstone Design:

ECE 497 - Electrical and Computer Engineering Capstone Design Project 1

Course Units: 0.5 Topics in the seminar include professional and ethical responsibilities; the historical and societal context of electrical and computer engineering; contemporary issues, and the specification, analysis, design, implementation, and testing phases of a design project. Research papers, project reports, and oral presentations are required.

ECE 498 - Electrical and Computer Engineering Capstone Design Project 2

Course Units: 0.5 The second term of the capstone design project. Students complete the design and begin the implementation of a system under the supervision of one or more faculty members. An oral presentation and design report are required. **CC:** WAC, WAC-R

ECE 499 - Electrical and Computer Engineering Capstone Design Project 3

Course Units: 1.0 Students complete the implementation, testing, and evaluation of a system under the supervision of one or more faculty members. A final presentation and design report are required. **CC:** WS

Electives:

Electives should be chosen in consultation with the student's advisor to meet the Common Curriculum requirements and enhance educational objectives. These elective courses, in addition to the five electives in math, science and electrical and computer engineering, can be customized to complete a double-major or one/or more minors.

Sample schedule starting with Math 113:

Students with different math backgrounds will have slightly different math sequences.

First Year

ESC 100 - Exploring Engineering

Course Units: 1.0 An introduction to engineering including fundamental topics core to engineering. The course includes a weekly design studio that emphasizes engineering design, teamwork, technical writing and ethics through several individual and team design projects. Not available to junior or senior engineering students. **Corequisite(s):** ESC 100L **CC:** SET, GETS **ISP:** STS **Note:** General engineering course common to more than one program.

ECE 101 - The Joy of Electronics

Course Units: 1.0 Introduction to the tools, skills, and principles of electrical and computer engineering. Emphasis is placed on developing an intuitive understanding while learning quantitative methods to design, test, and analyze electronics. Test and measurement tools include oscilloscopes, multimeters, and function generators. Circuit construction techniques include breadboarding and soldering as well as computer software to simulate circuits. Principles such as power, frequency, and modulation are taught through analog and digital electronics projects. Hands-on projects include an audio amplifier, crystal radio receiver, digital clock, and a microcontroller-operated robotic arm. **CC:** SET **Note:** Not open to students who have taken ECE 222 or ECE 225

FYI 100 - First-Year Inquiry

Course Units: 1.0 First-Year Inquiry engages students in the exploration of ideas and diverse perspectives through critical reading, thinking, and writing.

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

- Electives (2)*

One of

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 104 - Robots Rule! Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a robotics theme. Introduces students to algorithms, basic data structures, and programming techniques. Students will build and program robots, exploring mobility, navigation, sensing, and inter-robot communication. Additional class topics include: history of robotics, social and ethical issues, emotionally intelligent behavior and other current topics in robotics. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 105 - Game Development: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a computer games theme. Introduces students to algorithms, basic data structures, and programming techniques. Computer game development is used as an example application area and students implement their own games throughout the course. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an

introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area, focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 108 - Scientific Computing: Introduction to Computer Science

Course Units: 1.0 Computers are used as tools in analyzing and solving scientific problems as well as being embedded in many applications and experimental equipment used by today's scientists. This course is designed to introduce students to computer programming and problem solving through the use of Python. Python is a language commonly used by the scientific community, and we will focus on using it to address scientific problems, using extensions that facilitate scientific computing. CC: QMR, SET Note: A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

Second Year

ECE 118 - Introduction to Computer and Logic Design

Course Units: 1.0 Fundamental material in the area of digital logic circuit analysis and synthesis, and computer organization. The components of digital computers are studied at the gate level, the function level, and the machine organization level. Weekly laboratory exercises are required. **Cross-Listed:** CSC 118 **Corequisite(s):** ECE 118L **CC:** SET

ECE 218 - Embedded Microcontroller Projects

Course Units: 1.0 Focuses on the design and implementation of microcontroller systems. Topics include microcontroller architecture, interfacing, programming for control applications, multitasking, and tools used in embedded system design. The course includes a weekly project-based laboratory. **Prerequisite(s):** ECE 118 and one course from the following: CSC 103, CSC 104, CSC 105, CSC 106, CSC 107, or CSC 108 **Corequisite(s):** ECE 218L **CC:** SET

ECE 225 - Electric Circuits

Course Units: 1.0 Basic electrical circuit concepts and devices such as Ohm's law, Kirchhoff's laws, Thevenin and Norton equivalents, operational amplifiers, analysis methods, capacitors, inductors, ideal transformers, phasors, AC steady state analysis, complex power, frequency response and filters. Includes a weekly lab. Not open to Mechanical Engineering major **Cross-Listed:** BME 225 **Prerequisite(s):** MTH 112 or MTH 113 **Corequisite(s):** ECE 225L

ECE 240 - Circuits and Systems

Course Units: 1.0 Transient analysis of RLC circuits; modeling of circuits using differential equations; system models and properties; Laplace transforms applied to circuit and system design and analysis; system functions; complex

frequency; poles and zeros; stability; frequency response; filter design. Includes a weekly lab. Not open to Mechanical Engineering majors **Cross-Listed:** BME 240 **Prerequisite(s):** ECE 225 or BME 225 **Corequisite(s):** ECE 240L **CC:** WAC

ECE 241 - Discrete Systems

Course Units: 1.0 Discrete signals and systems; classification and properties of systems; difference equations; Z-transform; Fourier series, Fourier transforms, the DFT and FFT; filters and filter design; A/D and D/A converters; applications to audio signal processing. Includes a weekly lab. **Cross-Listed:** BME 241 **Prerequisite(s):** ECE 240 or BME 240 **Corequisite(s):** ECE 241L **CC:** WAC **ISP:** FLM

MTH 130 - Ordinary Differential Equations

Course Units: 1.0 Topics include first and second-order differential equations and first-order systems, including analytic, geometric, and numerical techniques, classification of first-order linear systems by eigenvalues, forcing and resonance, and the Laplace transform. Applications include but are not limited to population models, RC circuits, and damped and undamped harmonic oscillators. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 **Note:** Not open to students who have passed MTH 234 . **CC:** GDQR

or

MTH 234 - Differential Equations

Course Units: 1.0 Topics include differential equations and models, asymptotic solutions, eigenvalues and eigenvectors, classification of planar systems, higher-dimensional linear algebra, canonical form, linear and nonlinear systems, and applications. **Prerequisite(s):** MTH 115 and MTH 199, or permission from the Chair. **Prereq/Corequisite(s):** Not open to students who have passed MTH 130. **CC:** GDQR

ECE 248 - Introduction to Semiconductor Devices and Circuits

Course Units: 1.0 Semiconductors: theory of operation of diodes and transistors; circuit models; basic electronic circuits and amplifiers: transfer characteristics and inverters. Includes a weekly lab. **Prerequisite(s):** ECE 225 or BME 225 **Corequisite(s):** ECE 248L

- Math / Science elective
- Electives (1)*

Third Year**

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

ECE 343 - Introduction to Electromagnetic Engineering

Course Units: 1.0 Traveling waves: transmission lines; electrostatics; magnetostatics; applications to engineering problems; solutions by analytical and numerical techniques. **Prerequisite(s):** ECE 240, (MTH 117 and PHY 121) or IMP 120 **Corequisite(s):** ECE 343L **Lecture/Lab Hours** One lab per week.

ECE 366 - Control Systems

Course Units: 1.0 Modeling of control systems by block diagrams and flow graphs. Analysis of control systems response, error and stability, Root-Locus method, and frequency domain methods (Nyquist, Bode, and Nichols). **Prerequisite(s):** ECE 240 **Corequisite(s):** ECE 366L **Lecture/Lab Hours** One lab per week.

ECE 350 - Communication Systems

Course Units: 1.0 Frequency domain analysis, signal space representations, and their application to wireless communications; quality measures; performance in the presence of noise. Includes a weekly lab. **Prerequisite(s):** ECE 241 **Corequisite(s):** ECE 350L

ECE 497 - Electrical and Computer Engineering Capstone Design Project 1

Course Units: 0.5 Topics in the seminar include professional and ethical responsibilities; the historical and societal context of electrical and computer engineering; contemporary issues, and the specification, analysis, design, implementation, and testing phases of a design project. Research papers, project reports, and oral presentations are required.

- ECE elective
- Science elective
- Electives (4)*

Fourth Year

ECE 351 - Probability and Digital Communications

Course Units: 1.0 An introduction to probability with an emphasis on applications in digital communications. Digital signaling, coding, probability of error, matched filters, optimum receiver design, source entropy, channel capacity. **Prerequisite(s):** ECE 118, ECE 240

ECE 363 - Analysis and Design of Electronic Circuits

Course Units: 1.0 Multiple-stage amplifiers; Differential amplifiers; Frequency response of amplifiers; Feedback amplifier; Stability of electronic circuits; Analysis and design of operational amplifiers. **Prerequisite(s):** ECE 248 **Corequisite(s):** ECE 363L **Lecture/Lab Hours** Weekly lab

ECE 498 - Electrical and Computer Engineering Capstone Design Project 2

Course Units: 0.5 The second term of the capstone design project. Students complete the design and begin the implementation of a system under the supervision of one or more faculty members. An oral presentation and design report are required. **CC:** WAC, WAC-R

ECE 499 - Electrical and Computer Engineering Capstone Design Project 3

Course Units: 1.0 Students complete the implementation, testing, and evaluation of a system under the supervision of one or more faculty members. A final presentation and design report are required. **CC:** WS

- ECE electives (2)
- Electives (4)*

Note(s):

* Electives should be chosen to meet the remaining common curriculum requirements, and to attain each student's educational goals which may, include double-majors or minors. Students should work with their academic advisor to develop an appropriate plan of study.

** The fall term of the third year is the most common term for going on a full term abroad. With appropriate planning, students may go on a winter or spring terms abroad instead.

Requirements for Honors:

In addition to meeting all of the general college requirements for honors, candidates for honors in electrical engineering must present their senior project at the Steinmetz Symposium.

Energy Studies

Director: Professor Ann Anderson (Mechanical Engineering)

Energy Studies Minor

This program of study is available to students as a minor. Students take two core technical courses, two core policy courses and then choose two additional courses from a list of electives. This minor is designed for students in any major who are interested in energy related issues. Students completing this minor will gain both a technical and policy background which will help them to understand the technical, economic, sociological and policy issues surrounding energy and energy usage. Students are encouraged to participate in the New Zealand mini-term abroad as part of this program.

Please note: Some of the required courses have pre-requisites. Students are encouraged to plan their schedules accordingly.

Requirements for the Minor:

The course requirements are organized around a technical core (2 courses), a policy core (2 courses) and upper level electives (2 courses). No more than two courses may count towards a major in another discipline.

Required Technical Core Course (2):

CHM 101 - Introductory Chemistry 1

Course Units: 1.0 This is an introductory course that focuses on atomic and molecular structure, chemical bonding, stoichiometry, aqueous chemical reactions, and the properties of gases, liquids, solids and solutions. **Prerequisite(s):** Not open to students who have scored 4 or 5 on the AP Chemistry Exam or who have completed CHM 110H . All students who wish to enroll in an introductory chemistry course must take a placement examination to determine the appropriate course. See Course Selection Guidelines for more information on placement. **Corequisite(s):** CHM 101L **CC:** SCLB **Lecture/Lab Hours** Three lab hours/week,6/10 weeks. **ISP:** ENS

and

one of the following:

MER 231 - Thermodynamics 1

Course Units: 1.0 A basic engineering science course dealing with relations between heat and other forms of energy. Topics include: basic thermodynamic principles, properties of simple substances, energy and the first law of thermodynamics, entropy and the second law of thermodynamics, and ideal cycle analysis. Elementary environmental economic and sustainability considerations related to thermodynamic processes. **Prerequisite(s):** PHY 120 & (MTH 112 or MTH 113) or IMP 120. **Corequisite(s):** CHM 101 **CC:** ENS

or

PHY 123 - Heat and Light

Course Units: 1.0 Calculus-based introduction to thermodynamics, geometric and physical optics, and astrophysics. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 121 or IMP 121 . **CC:** ENS

or

CEE 260 - Thermo-Fluid w/Lab

Course Units: 1

Thermal-Fluid Systems is an integrated study of fundamental topics in thermodynamics, fluid statics and mechanics. The course develops the conservation principles for mass, energy, and linear momentum for control volume analysis as well as the 2nd Law of Thermodynamics. Dimensional analysis principles are developed and applied to incompressible flow in pipes, open channel flow, power generation systems, and air-conditioning focusing on the control volume approach. **Prerequisite(s):** CEE 201 , MTH 115 or IMP 121

Required Policy Core Course: (2)

(alternative courses must be approved by minor advisor):

ECO 228 - Environmental and Natural Resource Economics

Course Units: 1.0 Economic causes of environmental degradation and natural resource depletion; benefit-cost analyses of public policies for environmental protection and natural resource preservation; specific issues in energy and wilderness resource management, air and water pollution abatement, and solid waste management. **Prerequisite(s):** ECO 101 or permission of instructor. **CC:** SOCS **ISP:** STS, ENS

one of the following:

ANT 241 - Environmental Anthropology

Course Units: 1.0 This course examines anthropological approaches to the environment and environmentalism. It asks questions such as: How does culture shape our perception of nature? What can conflicts over environmental protection, natural resources and human manipulations of natural materials tell us about contemporary societies? What does it mean to call an issue "political" or "cultural," versus "scientific" or "technical"? Students will develop the critical analysis skills to examine the natural world as a site of cultural politics, using anthropological concepts to examine environmentalism in diverse geographical and historical settings, including the Amazon, the Niger Delta, the suburban mall, and the Union campus. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** ENS, STS

or

HST 225 - American Environmental History

Course Units: 1.0 This course aims to give students the knowledge and the tools to think critically about how history has shaped the present state of the earth and human relationships with it. It focuses on the history of man's interaction with nature on the North American continent, with a particular focus on the area that would become the United States, from precolonial times until the present. **CC:** SOCS **ISP:** AMS, ENS

or

PHL 273 - Environmental Ethics

Course Units: 1.0 An exploration of the ethical and philosophical ideas that have shaped attitudes toward the environment and toward non-human species. **CC:** HUM **ISP:** ENS, STS

or

PSC 272 - The Environment, Energy, and US Politics

Course Units: 1.0 Examination of how politics and policymaking affect the air we breathe, the water we drink, and the land we live on. This course will explore key U.S. environmental issues and their scientific underpinnings as well as the connections between these issues and our collective use of natural resources. The course will review major pieces of federal environmental law in the United States and address the policy considerations, justifications, and regulatory frameworks underlying them, as well as the effectiveness of these laws in achieving a healthier environment. The course will also examine the respective roles of Congress, the executive agencies, and the courts in determining environmental policy. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, STS

or

SOC 270 - Social Movements, the Environment, and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** PSC 283 **Prerequisite(s):** SOC 100 **ISP:** AMS, ENS, STS

or

SOC 359 - Environmental Policy and Resource Management

Course Units: 1.0 An examination of environmental issues and problems such as acid rain, ocean dumping, and nuclear wastes, and the social forces that shape environmental policies. Students complete an internship with an environmental service theme. **CC:** SOCS **ISP:** ENS, STS

Elective Courses:

pick any 2 in consultation with minor advisor, alternative courses must be approved by minor advisor:

Engineering Courses:

ECE 341 - Energy Conversion

Course Units: 1.0 Theory of electromechanical energy conversion; characteristics of transformers and DC induction; and synchronous machines. **Prerequisite(s):** ECE 225 or BME 225

ECE 342 - Power Electronics

Course Units: 1.0 Rectifying devices and rectifier circuits: device characteristics, waveforms, harmonic content filtering. Controlled rectifiers (thyristors, triacs): device characteristics, single phase and multiphase systems. Snubber circuits and divide limitations. DC-DC converters: design, application, topologies. Energy storage element selection and design: capacitors and inductors. **Prerequisite(s):** ECE 248, ECE 350

ECE 344 - Electric Machines and Drives

Course Units: 1.0 Introduction to electric drives; understanding mechanical system requirements; DC motors and variable speed drives; current, speed, and position controllers; induction machine variable speed drives; space vectors; permanent magnet AC and brushless DC motors; efficiency considerations and applications to alternative energy systems. **Prerequisite(s):** ECE 240

ENS 200 - Energy

Course Units: 1.0 Designed to acquaint the student with the many societal and technological problems facing the United States and the world due to the ever increasing demand for energy. **Corequisite(s):** ENS 200L **Lecture/Lab Hours** One lab per week. **ISP:** ENS

ENS 209 - Renewable Energy Systems

Course Units: 1.0 The study of renewable energy resources and the conversion technologies available to utilize them to meet society's energy needs. Topics include forms of energy; First and Second Laws of Thermodynamics; energy conversion and efficiency; sustainability; energy storage. Historical perspective on world and U.S. energy usage, conversion technologies, and energy resources. Fundamentals of the conversion processes and systems involved in the use of solar thermal and photovoltaic, wind, bioenergy, geothermal, thermoelectric, hydro and ocean technologies. The use of hydrogen as a fuel and technologies to produce and use it. Economic and environmental issues relevant to renewable energy resources. Class will be supplemented with laboratory demonstrations and field trips to visit existing renewable energy systems. **Prerequisite(s):** MER 231 or PHY 122 **Corequisite(s):** ENS 209L **CC:** SET **ISP:** ENS, STS

ENS 253 - Environmentally Friendly Buildings

Course Units: 1.0 Many energy consumption and adverse environmental effects are attributable to buildings and their use. In this course, through instructions, hands-on experience, computer simulation, and research, the students will become acquainted with the inner workings of the subsystems in buildings: foundations, framings, walls, sidings, roof, electrical systems, lighting, appliances, heating, air-conditioning, ventilation, indoor air quality, basement, crawl space, attic, water and moisture management; plumbing, flooring, finishes, furniture, insulation, xeriscaping, and LEED rating system. The students will become aware of indoor and outdoor environmental issues and the life cycle costs of the existing systems. They will also learn the latest science and technology to reduce the negative effect of these subsystems on the environment. Laboratory: hands-on experience with the above subsystems, site visits, Computer simulations, research, projects, and presentations. There are no prerequisites for this course and it is open to all students. **Corequisite(s):** ENS 253L **CC:** SET, GDQR, GETS, SCLB **ISP:** ENS, STS

MER 232 - Thermodynamics 2

Course Units: 1.0 Application of the fundamental laws of thermodynamics to the analysis of energy conversion devices, systems, and processes. The course moves beyond MER 231 through the analyses of more realistic power-producing and refrigeration systems, systems in which there are more than one substance present, and reactive systems. Factors that govern energy conversion processes and impact on the efficiency of those processes are studied with attention given to environmental and sustainability implications. **Prerequisite(s):** MER 231, CHM 101.

MER 471 - Solar Energy Analysis and Design

Course Units: 1.0 Analysis and design applicable to the use of solar energy for heating, cooling, and electric power generation. Solar geometry, solar collector positioning, energy storage, and component and system design. **Prerequisite(s):** MER 333 or by permission of instructor. **CC:** SET **ISP:** ENS

Science Courses:

GEO 112 - Environmental Geology

Course Units: 1.0 The increasing interplay between the environment and human activity has profound effects on our landscape and society. This course focuses on anthropogenic issues such as climate change, soil and groundwater contamination, traditional petroleum resource extraction and dependence, mineral and water resources, and alterative sources of energy. To understand how humans have perturbed the natural environment, it is critical to understand geologic principles and processes. The course also explores natural disasters including earthquakes, volcanoes, hurricanes, landslides, floods, and coastal erosion and their effects on different segments of society, as the impacts of natural disasters are affected by various socio-economic factors. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 112L **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 120 - The Story of Earth and Life

Course Units: 1.0 An investigation of Earth's dynamic history and evolutionary changes over the past 4.5 billion years. Topics include impacts of climate change, the evolution of life, major changes in the nature of Earth's atmosphere and oceans, and for major mountain building events that have affected the continents as well as the evolutionary development of plant and animal life as recorded in the geologic record. Specific topics include the origin of life, mass extinctions of dinosaurs and other organisms, paleoclimate, and the geologic history of New York State. The link between geology, chemical cycles and life is highlighted, as is the relation of past biogeochemical changes to current global environmental change. Field trips during lab investigate local geologic history and the course may require a weekend field trip. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 120L **CC:** SCLB, GNPS, SET **ISP:** ENS, STS

Social Science/Humanities Courses:

ANT 241 - Environmental Anthropology

Course Units: 1.0 This course examines anthropological approaches to the environment and environmentalism. It asks questions such as: How does culture shape our perception of nature? What can conflicts over environmental protection, natural resources and human manipulations of natural materials tell us about contemporary societies? What does it mean to call an issue "political" or "cultural," versus "scientific" or "technical"? Students will develop the critical analysis skills to examine the natural world as a site of cultural politics, using anthropological concepts to examine environmentalism in diverse geographical and historical settings, including the Amazon, the Niger Delta, the suburban mall, and the Union campus. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** ENS, STS

EGL 280 - Nature and Environmental Writing

Course Units: 1.0 This course will focus on the traditions of nature and environmental writing in the American context, with an emphasis on the social and cultural dynamics of the environment and environmental action. Among other questions, we will ask ourselves: How do class, gender, and race enter into the nexus of social interactions that shape our environment? What is the place of literature in community, literacy, and environmental activism? What are the connections between the ways we speak and write about the environment and our actions toward the environment?

How does the wilderness concept affect the ways citizens have access to public spaces? We will consider the concept of "nature" as we move through the course, culminating (if you like) with some nature writing of your own. Readings may include Thoreau; Carson; Leopold; Kingsolver, and selections from *Reading the Roots: American Nature Writing Before Walden*; *Colors of Nature*; Lauret Savoy, T*race: Memory, History, and the American Landscape*; and F. Marina Schauffler, *Turning to Earth: Stories of Ecological Conversion.* **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, ENS, STS

HST 225 - American Environmental History

Course Units: 1.0 This course aims to give students the knowledge and the tools to think critically about how history has shaped the present state of the earth and human relationships with it. It focuses on the history of man's interaction with nature on the North American continent, with a particular focus on the area that would become the United States, from precolonial times until the present. **CC:** SOCS **ISP:** AMS, ENS

MLT 209 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** ENS 222 **CC:** LCC, SET, HUL, HUM, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

PHL 273 - Environmental Ethics

Course Units: 1.0 An exploration of the ethical and philosophical ideas that have shaped attitudes toward the environment and toward non-human species. **CC:** HUM **ISP:** ENS, STS

PSC 272 - The Environment, Energy, and US Politics

Course Units: 1.0 Examination of how politics and policymaking affect the air we breathe, the water we drink, and the land we live on. This course will explore key U.S. environmental issues and their scientific underpinnings as well as the connections between these issues and our collective use of natural resources. The course will review major pieces of federal environmental law in the United States and address the policy considerations, justifications, and regulatory frameworks underlying them, as well as the effectiveness of these laws in achieving a healthier environment. The course will also examine the respective roles of Congress, the executive agencies, and the courts in determining environmental policy. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, STS

SOC 270 - Social Movements, the Environment, and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** PSC 283 **Prerequisite(s):** SOC 100 **ISP:** AMS, ENS, STS

SOC 359 - Environmental Policy and Resource Management

Course Units: 1.0 An examination of environmental issues and problems such as acid rain, ocean dumping, and nuclear wastes, and the social forces that shape environmental policies. Students complete an internship with an environmental service theme. **CC:** SOCS **ISP:** ENS, STS

- TAB 333T - New Zealand Mini-Term Abroad (offered every year)

Engineering

Bachelor of Science degrees are offered in biomedical engineering, computer engineering, electrical engineering, and mechanical engineering. All four engineering programs are accredited by the Engineering Accreditation Commission of ABET (http://www.abet.org). New majors in civil engineering and environmental engineering also offered starting in Fall 2023. These programs are registered with NY State and we are actively preparing for ABET accreditation.

As per ABET rules and guidelines, accreditation for an engineering program cannot be completed until the graduation of its first class. **Accreditation is retroactive**; therefore assuming accreditation is granted, all students entering the Civil or Environmental Engineering degree programs would graduate from an ABET accredited program. The Civil and Environmental Engineering programs are actively preparing to seek accreditation from the Engineering Accreditation Commission of ABET after the graduation of its first class in 2027.

Other major and minor programs that include engineering components are energy studies, environmental science, environmental engineering, and nanotechnology. Please see the relevant sections of the Academic Register for descriptions of these areas of study.

Course Selection Guidelines

Course Sequence: The first year in engineering begins with ESC 100 (Exploring Engineering), a course that introduces students to engineering disciplines through interdisciplinary design projects, presentations by engineering professionals, and a hands-on team design project. First year engineering students also take three terms of calculus and two terms of physics (PHY 120 , PHY 121). There are different calculus sequences that can be taken based on the high school math background of the student; students take a placement exam in the summer before their first year to determine their calculus sequence. An Integrated Math/Physics sequence (IMP 120 , IMP 121) that roughly spans the content of MTH 115 , MTH 117 and PHY 120 , PHY 121 is an option for some first year students. Students are encouraged to choose an engineering major early in the first year since program curricula begin to diverge in the winter term; however, students do not need to declare their major until the spring term of the first year.

Engineering students complete the College's Common Curriculum requirements; details of these requirements can be found in the Common Curriculum section of the Academic Register. Students may go on any of the terms abroad listed in the International Programs section of the Academic Register by notifying their academic advisor early of their interest in a particular program and working closely with their advisor on course selection.

Engineering Science Courses

Courses listed in this section are general engineering courses common to more than one program.

English

Chair: Associate Professor J. Lewin (also Director of General Education)
Faculty: Endowed Professors: William D. Williams Endowed Professor J. Murphy (also Director of Interdisciplinary Studies, on leave Spring 2025), Edward Everett Hale Jr. Endowed Professor J. Smith (Director of Creative Writing minor); Professors C. Bracken, A. Burkett (also Program Director of STS, Co-Director of the Templeton Institute), K. Doyle (on leave from English as Dean of Academic Departments and Programs), H. Jenkins, P. Wareh (on leave Spring 2025); Associate Professors B. Kuhn, K. Lynes, J. Mitchell (also Chief Diversity Officer and Dean of Diversity, Equity, Inclusion and Belonging), J. Troxell (also Co-Director of Film Studies), B. Tuon, S. McAuliffe (on leave AY 2024-2025); Senior Lecturer in English and Russian A. Pease; Visiting Assistant Professors A. Juarez, K. Staudt
Staff: Debora Catharine (Administrative Assistant)

Recent Innovations in Union's English curriculum:

- New, six-course minor in Creative Writing begins this fall (see under minors).
- Number of courses to complete an English literature minor reduced from seven to six.
- "Confronting the Canon" & BIPOC authors courses added to the curriculum with the Class of 2025 (see below).
- Major requirements for historical range remain in place (medieval to early-modern literature, Shakespeare, and pre-1900 literature).

In June 2020, Union's English department affirmed the following pledge:

"We will restructure our curriculum so as to include and make visible the experiences of underrepresented students. We pledge to do more to center the lives and experiences of those who are Black, Indigenous, and People of Color in our scholarship, teaching, and service both within and beyond the Union College community." In order to put this pledge into practice we developed a "Confronting the Canon" series of courses (EGL 190-199) and expanded our offerings on literature by BIPOC authors in order to embed their lives and experiences into the undergraduate study of literature. One course on BIPOC-authored literary texts is required of all English students.

"Confronting the Canon" courses are designed to introduce questions raised when interrogating and reconfiguring what has long been considered the traditional, Western literary canon, with which English students are expected to be familiar. The courses emphasize the fact that English literary study has an established history of focusing on texts by white male authors, often at the expense of works written by, among others, women, writers of color, and queer writers. By confronting curricular choices and their implications, "Confronting the Canon" courses explore reimagining the canon intentionally. The courses ask questions such as: Who determined the canon? What does the canon perpetuate? Who is included and who excluded? What is at stake in upholding or dismantling it? What do we envision as our role in the field of English literary and cultural studies?

Course Selection Guidelines

*Placement in Union's English Curriculum***:**

Students enroll in any English 100-level course. If you have credit for AP exams see placement explanation below; regarding International Baccalaureate or A/O level credit, speak with English chair.

All Students, regardless of major:

- All students may enroll in 100-level English courses, which fulfill CQ requirements and are prerequisites to English 200-level courses.
- **All 100-level courses are equal in difficulty. Students may not enroll in multiple English courses between 100-149 without permission.**
- "Confronting the Canon" courses between 190-199 are designed for and required of prospective English majors, who have priority, but are open to all (see also AP 5 information).
- **All 200-level courses are equal in difficulty** and appropriate for prospective English majors and minors as well as other interested students (with one 100-level or AP 5 credit). (see below)

AP English general credit:

A score of four or five on Advance Placement exam in either English Literature or English Language transfers as one unassigned course credit toward the 36 credits required to graduate. An AP credit, however, does not substitute for requirements in the Complex Questions: Global Challenges & Social Justice general education system. An AP score of four transfers as one credit but does not fulfill the prerequisite of a 100-level English course for GenEd credit or further English study. For an AP score of five, see below.

Students scoring a "5" on AP English Exams:

The English Department recognizes a "5" on AP English Exams as fulfilling the prerequisite for 200-level coursework; by securing a waiver from the registrar, "AP 5" students may begin their studies in 200-level English courses. For prospective English majors, minors and IDs, an AP 5 score does **not reduce** the ultimate number of courses, but rather by eliminating a course between 100-189, *de facto* "AP 5" major, minors and IDs **earn an extra elective**. (More information for prospective majors or minors below).

*Prerequisites in Union's English curriculum***:**

- One 100-level course is a prerequisite for any 200-level course. (Except: see AP 5 above)
- 300-level (Jr. seminar) EGL course registration requires a total of at least three English courses: one 100-level course (or AP 5) and two 200-level courses
- 400-level (Sr. seminar) EGL course registration requires a total of at least six English courses: one 100-level course (or AP), one 190-199 course, and four 200-level courses. Junior and Senior EGL seminars are designed mainly for majors, IDs and minors, who have priority. Some seats may be available to interested non-majors at the discretion of the instructor.

Summary of the requirements for the English major, English ID major, English minor and Creative Writing minor.

Requirements for the English Majors

Twelve courses, including:

two introductory-level courses:

one 100-189 (or AP 5) and one "Confronting the Canon" (190-199) course

seven intermediate courses (200-level), among which are required:

one course on Shakespeare; one pre-1700 course; one 1700-1900 course; one BIPOC-literature course; and three electives.

three seminars:

one junior seminar (300-level), one senior seminar (400-level), and a third seminar at either level.

FAQ:

- **Thesis is not required of English majors**, who may still earn college GPA distinctions (*summa cum laude*, *magna cum laude* and *cum laude*).
- Students seeking Honors in English apply to write a thesis and take 14 English courses, the additional two courses being a two-term Honors thesis seminar, EGL 402-3, during the Fall-Winter of students' senior year.
- **All English majors**, **including those who write a thesis**, take a senior seminar to fulfill their WS requirement.
- An AP 5 score may waive the required 100-level course (100-189), substituting a 200-level elective - but "Confronting the Canon" (190-99) and BIPOC lit remain requirements.

Requirements for the ID Majors

Eight courses, including:

two introductory-level courses:

one 100-level course (100-189) (or AP 5) and one "Confronting the Canon" (190-199) course

five intermediate courses (200-level), among which are required:

either a Shakespeare course (200 or 201) **or** a pre-1700 course (202-215); one BIPOC literature course and three electives

one seminar at the 300- or 400-level.

FAQ:

- An AP 5 score may waive the required 100-level course (100-189) - substituting a 200-level elective - but "Confronting the Canon" and BIPOC lit remain requirements.
- Interdepartmental majors must pay particular attention to the requirements of both departments and **complete one senior seminar/project (WS) that satisfies both departments**. English does not require a thesis but the other department in the ID major may require a combined thesis.
- Students seeking an **Honors ID degree combining English** and another department have a **10-course** requirement, the additional two courses being the two-term Honors thesis seminar (EGL 402-3, but assigned an individual Interdepartmental thesis number). ID Honors students should be sure to take EGL 302 Literary Theory during the Winter of their Junior year.

Requirements for the English Minor:

Six courses, including:

one 100-level course between (100-199) (including Confronting the Canon);

either a Shakespeare course (200 or 201), **or** a pre-1700 course (202-215), **or** a 300-level seminar;

one BIPOC- literature course;

three 200-level electives.

FAQ:

- An AP 5 score may waive the required 100-level course (100-199) - substituting a 200-level elective - but not the BIPOC lit requirement.

Requirements for the Creative Writing Minor:

Six courses, including:

one 100-level course between 100-199 (including Confronting the Canon);

one BIPOC - literature course;

two 200-level creative writing workshops in two different genres (poetry, fiction, creative non-fiction, playwriting, screenwriting);

one 200-level course that is **either** a creative writing -cognate course, **or** a third creative writing workshop.

one 300- or 400-level creative writing workshop.

FAQ:

- An AP 5 score may waive the required 100-level course (100-199) - substituting a 200-level elective - but not the BIPOC lit requirement.
- A second 300/400- level workshop may substitute for one of the 200-level CW workshops with instructor's permission.

For detailed information about the content of English department courses, departmental talks and activities, see our posters and emails, the English Department's website (https://www.union.edu/english), Facebook page ("Union College English Department"), or Instagram account (@unionegl).

English Creative Writing Minor

Creative writing minors take six courses - five of which are specific:

One Introductory Course* between 100-199, including "Confronting the Canon":

EGL 100 - The Study of Literature: Poetry

Course Units: 1.0 Students will explore the art of poetry by examining a selection of poems from at least three cultures and by considering how poetry conveys its complex meanings through voice, image, rhythm, as well as formal and experimental structures. Particular attention will be given to developing reading and writing skills. 100-level courses are open to all students. **CC:** HUL, WAC, HUM

EGL 101 - The Study of Literature: Fiction

Course Units: 1.0 Students will explore fictional works from at least three cultures. Emphasis will be placed on exploring the art of narrative - considering the ways stories get told and the reasons for telling them. Attention may be paid to such concerns as narrative point of view, storytelling strategies and character development, the relationship between oral and written narrative traditions, and narrative theory. Particular attention will be given to developing reading and writing skills. 100-level courses are open to all students. **CC:** HUL, WAC, HUM, JLIT

EGL 102 - The Study of Literature: Dramatic Literature and Social Justice

Course Units: 1.0

In this course we will explore how plays engage audiences and readers in fundamental questions about human identity. Not only do plays acted on the stage abound in examples of characters who switch places or are mistaken for one another, they also provide a forum for individual characters to question their relationships with the people and culture that surround them. Even as plays stage the most private of feelings in a public setting, they also suggest that human interactions frequently involve playing a role. Dramatic literature puts front and center the ways in which many forms of identity-including gender and race-are socially constructed. At the same time that this course offers a wide-ranging introduction to the forms of dramatic literature, it will pay special attention to the ways in which play present questions of social justice. Who is given and denied agency? How do plays stage and raise awareness of problems of inequity? How do plays both reinforce and critique the stereotypes connected to gender, race and mental illness.
As we explore to the different forms of identity negotiated on the stage, we will be alert to how our own diverse experiences shape our experiences as readers and audience members. We will ask how plays such as *Antigone, Much Ado about Nothing,* and *A Doll's House* reveal the constrictions of gender roles. We will explore the varied ways in which plays such as *A Raisin in the Sun, Clybourne Park, Fences,* and *Sweat* represent the racism that interferes with the full participation in the American Dream, seen in both employment and housing. And we will explore how *Water by the Spoonful* and *The Flick* represent the struggles of drug addiction, PTSD, anxiety, and depression in a diverse American Society .

100-level courses are open to all students. **Cross-Listed:** ATH 104 **CC:** HUL, WAC, HUM, JLIT

EGL 110 - The Poetic Process

Course Units: 1.0 This course will introduce students to the pleasures of poetry by way of the process of creating it. Students will read and discuss poems by a diverse range of contemporary poets, respond to writing prompts that clarify the structure of these poems while encouraging individual experimentation, and complete a final portfolio of carefully revised assignments. 100-level courses are open to all students. **CC:** HUL, WAC, HUM, JCAD, JLIT

EGL 111 - Introduction to Creative Writing

Course Units: 1

In this multi-genre creative writing course, we'll read and write poetry, fiction and/or creative nonfiction, considering everything we read from a writer's perspective, asking what we can learn from it for our own writing. We'll read work by writers from diverse identities, perspectives, and aesthetic approaches; complete many writing exercises; and develop longer drafts outside of class. Students will gain editorial skills and will regularly share their writing with the group. This introductory course is appropriate for anyone who is curious about using language as a creative medium. 100-level course are open to all students. **CC:** HUL, WAC, HUM, JCAD, JLIT

EGL 115 - Black Lives Matter Poetry

Course Units: 1

This course examines poetry that is part of the Black Lives Matter movement. We will investigate poetry as a form of protest for African Americans in the 21st Century and examine how it is used to resist white supremacy and violence against Black communities. Poet: Jericho Brown, Danez Smith, Ross Ray, Eve L. Ewing, Claudia Rakine, and more. Also, counts toward AFS, AMS.
100-level courses open to all students. **CC:** HUL, LCC, JCAD, JLIT, WAC **ISP:** AFR, AMS

EGL 116 - Poetry of People and Places

Course Units: 1

In the song "In My Life," John Lennon sings "Though I know I'll never lose affection / for people and things that went before / I know I'll often stop and think about them." The speaker sings about "people and things" that have shaped and continue to inform his identity. In this class, we will study poems that impact a person's sense of self and home. The poems we will read will explore history, family, place, race, class, gender, as well as love, sex, death, mourning, and joy, as these are the "stuff of life."
100-level courses are open to all students. **CC:** HUL, HUM, WAC, GCAD, GLIT

EGL 119 - Decolonial Poetries

Course Units: 1

In this course we'll read and critically engage with contemporary poets writing predominantly in English from a decolonial perspective. From the intersection of poetics, aesthetics, decolonial (and anti-colonial) theory, and social justice in the arts, we will explore what a poetics of reading and writing decoloniality entails. By centering our exploration on poets who write from ongoing colonial experiences, we'll build an understanding of the work of poetry in decolonial imaginings. We will explore how decolonial poetic practices work against racism, colonialism, and other contemporary systems of oppression, and consider how decolonial poets respond to and engage with these systems both

overtly and through their aesthetics. Students will develop an understanding of both traditional and experimental poetics, along with decolonial theories.
100-level courses opne to all students.

EGL 120 - Fictional Forms

Course Units: 1

This course introduces students to a variety of fictional forms. We consider what makes prose into literary fiction and develop an arsenal of key terms and ideas about narrative that will lay the groundwork either for further study or for lifelong learning and appreciation. Our primary sources range from oral stories to novels from around the globe to recent experiments in fiction, with particular emphasis on writers from underrepresented groups.
100-level courses are open to all students. **CC:** HUL, WAC, HUM

EGL 140 - Introduction to Digital Studies: Digitizing the Past

Course Units: 1 The digital age and the medieval period-two disparate phases of history-may at first blush appear to have nothing in common. Yet, as medieval scholars have shown, this myth is best dispelled in and through the medieval manuscript, a physical object representing the convergence of text and technology in its earliest form. Using the medieval manuscript as a case study, this class will introduce students to digital topics such as online storytelling, digital archives and curation, online exhibits, data interpretation, and more. Along the way, students will learn skills of technical literacy, written analysis, and archival interpretation using programs such as Omeka, Artsteps, Audacity, Voyant Tools, and StoryMaps. **Cross-Listed:** SMT 140, AAH **CC:** HUL, WAC, HUM

EGL 150 - Film Form and Analysis

Course Units: 1.0 **(Spring: Troxell)** In this course we will examine elements of film form such as cinematography, sound, editing, lighting, mise-en-scene, and narrative structure. Considering film an art form, a commercial product, a psychological experience, and a social practice, we will also pay close attention to issues of genre, performance, intertextuality and authorship. 100-level courses are open to all students. **CC:** HUL, WAC, HUM

EGL 188 - Cyborgs!

Course Units: 1 Cybernetic organisms, or "cyborgs," represent the ultimate integration of biology and technology since these are organisms living with abiotic parts. This exciting new interdisciplinary course will provide an introduction to the biological and computer science concepts fundamental to the development of cyborg technology as well as critical evaluation of the consequences of introducing such technology in society. Students taking this course will not just be trained how to develop cyborg technology, but whether or not such technology should be developed for society. **Cross-Listed:** BIO 088, CSC 088 **CC:** HUL, HUM, SCLB, SET, WAC, JDQR, JETS, JLIT JNPS

EGL 190 - Confronting the Canon: Reimagining Beowulf

Course Units: 1.0 In "Reimagining *Beowulf*," we'll examine one of the oldest and most enduring works of Old English literature, *Beowulf.* Through critical analysis and discussion, students will confront *Beowulf* not only as an epic poem but also as a cultural artifact that has evolved through time, shaping and being shaped by its place in the British literary canon. Exploring the complexities of representation, we'll examine how the text explores hierarchies of identity, power, religion, class, race, and gender. Moreover, this course challenges students to critically engage with *Beowulf*, questioning conventional interpretations and seeking alternative narratives within the text. By exploring marginalized perspectives and overlooked themes, our aim will be to recuperate and amplify voices often silenced in traditional analyses of this canonical text. EGL 190 may alternatively count as a pre-1700 credit for English majors. 100-level courses are open to all students. **CC:** HUL, WAC, HUM, JLIT

EGL 191 - Confronting the Canon: The Modernist Edition

Course Units: 1

Modernism, the literary movement that dominated in the West from about 1890-1950, has been a stronghold of white male privilege, subtended by deep seated anxieties about other bodies. In this section of "Confronting the Canon," we will consider the complicated legacy of modernism and its influence on more recent literary works; the often troubling personal and political legacy of modernist writers; the relationship between the modernist canon and perpetuation of white supremacy; and the ways in which modernism, and the scholarship about it, bolster a rigid heteronormative patriarchy. "Confronting the Canon" courses are cornerstones of the new English curriculum and required beginning with majors/minors in the class of 2025.
100-level courses are open to all students. **CC:** HUL, HUM, WAC **ISP:** AFR, GSW

EGL 192 - Confronting the Canon: What is an Empire?

Course Units: 1 The study of the relationship between literature and empire has overwhelmingly focused on a small core of European empires. This class will expand understanding of the relationship between imperialism and literature by examining novels, epics, and allegories written in entangled colonial networks in which Europe is influential, but not the sole player. Readings for this class will focus on empires located on the continents of Africa and Asia broadly defined, including the Zulu, Ottoman, Russian, Japanese, and Soviet
imperial formations. **CC:** HUL, HUM, WAC, GLIT, GCHF, GSPE **ISP:** AFR, AIS, GSWS

EGL 193 - Confronting the Canon: Confronting the Hero's Journey

Course Units: 1

This course will challenge traditional renderings of various heroic tales through the double-edged lens of queer and feminist theory. Our discussions will draw from various scenes and film screenings of classic stories that may include *The Epic of Gilgamesh,* the *Bhagavad Gita,* Ovid's *Metamorphoses*, Aeschylus's trilogy *The Oresteia*, Homer's *Odyssey*, Virgil's *Aeneid*, the story of Jesus, *Beowulf*, and several fairy tales, as well as slightly more contemporary classics such as Herman Hesse's *Siddhartha, the Lord of the Rings, Star Wars, The Matrix, Harry Potter,* and *The Wizard of Oz*, among others. "Confronting the Canon" courses are cornerstones of the new English curriculum and required beginning with majors/minors in the class of 2025. Also counts toward GSW.
100-level courses are open to all students. **CC:** HUL, HUM, JCHF, JLIT, JSPE, WAC **ISP:** GSW

EGL 194 - Confronting the Canon: Confronting Dido's Many Faces

Course Units: 1 This course introduces students to some of the foundational questions raised when interrogating & reconfiguring what has long been considered the traditional, Western literary canon. English classes, in many different educational settings, have an extensive history of perpetuating the "greatness" of texts by white, heterosexual, male authors, often at the expense of those works written by women, writers of color, & queer writers, among other diverse groups. "The Many Faces of Dido" will challenge traditional interpretations of Dido, portrayed in classical works of fiction, poetry, drama, & art. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** GSWS

*See explanation of credits and placement for students who receive a 5 on their AP exams in English literature or English language.

One 200-level course focused predominantly on literature by authors who are Black, Indigenous, or People of Color (BIPOC) from the following:

EGL 213 - Circum-Atlantic Revolutions

Course Units: 1.0 This course will draw on literary and historical writings and artwork that emerged before, during, and after the three revolutions that ravaged the circum-Atlantic world between 1765 and 1804. We will consider interconnected events leading up to each conflict and the consequences of war on racial, ethnic, gendered, and indigenous groups. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF,JLIT, JSPE **ISP:** AFR, AMS, GSWS

EGL 233 - 18-19th Century Early Literature of African Diaspora

Course Units: 1.0 This introductory survey course will trace African American movement towards literary and aesthetic mastery beginning with what Henry Louis Gates calls "oral writing." Readings begin with the first known written poems and progress from slave narratives and autobiography to essays and fiction. Authors include Phillis Wheatley, Harriet Jacobs, Frances Ellen Watkins Harper, Solomon Northup, Charles Chesnutt, W.E.B. Du Bois, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AFR, AMS, GSWS

EGL 237 - Reclamation & Renaissance: Black Literary Arts 1900 to 1960, "Dark Like Me - That is my Dream!"

Course Units: 1.0 In this course we will read literatures of African diaspora from the United States and from the English-speaking African Diaspora more broadly speaking, written in the early to mid- 20th century. This course is deliberately using the adjective Black instead of African American to highlight our awareness that the literature of the early 20th century is part of a Pan-African movement. Threads we will follow include: issues of identity (being American; being Black; racial and social passing); miscegenation; claims to culture through literature; political and social change through literature (is it possible?); self-representation and activism through literary arts; rise of pride in being part of African diaspora; gender roles in literary and social contexts. Questions we will raise and explore in the course of the term include: What is the relationship between aesthetic production and political action? What are the gendered aspects of the expressions of the writers and artists? How are "folk" forms incorporated into "literary" forms? How does self-representation operate in the reclamation of a sense of self? We will engage with the complexities of cultural diversities within the African diaspora while we contemplate the traditions we follow. We will begin, as the title of the course suggests, around the turn of the 20th century, when Du Bois writes that the "problem of the twentieth century is the problem of the color line" (Souls of Black Folk 45). We will move through what some called the Harlem Renaissance, during which time writers such as Langston Hughes celebrated being Black in a reclamation of the self: "Dark like me-That is my dream!" (Selected Poems 14). We will explore the literature of the pre- and post- WWII era, ending the term with what was known as the Black Arts Movement. The goal, in terms of content, is to provide you with a broad sampling of literature of the African Diaspora literature of the early 20th century, with a particular focus on literature (prose in the form of essays, short stories, novels; poetry; plays) generated from the United States while also reaching toward its more global pan-Africanist roots. I hope you will follow your interests and curiosities, after the course is over, to explore this literature further. (Also counts for Africana and American Studies). **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JLIT **ISP:** AFR, AMS

EGL 248 - Introduction to Black Poetry

Course Units: 1.0 We will explore the development of African-American poetic voices in North America. We will look at poems and poets as they constitute a hybrid and composite tradition. We will read poetry in anthologies; we will also read several full books by individual authors, and will listen to performance poetry on CD and DVD. A partial list of poets we will read includes Wheatley, Harper, Dunbar, Hughes, McKay, Helene Johnson, Brooks, Baraka, Clifton, Sanchez, Cortez, Morris, Mullen, Brathwaite, Komunyakaa, Francis, Dungy, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AFR, AMS

EGL 252 - The Islamic World and Global Literary Culture

Course Units: 1

The Islamic World and Global Literary culture course asks how two designations of the global - world literature and the Islamic world - think through the concepts of globalization and community. Using insights drawn from recent literary, sociological, and theological research we will consider the important and dynamic role of religion, specifically Islam, in contributing to cultural identity on a global scale.

Students will engage with literary and theoretical texts that have been produced within, by, and about these communities to explore how authors reckoned with the world community envisioned by Islam and how Islamic authors, both practicing and non-religious, have been received into the global literary sphere. In addition to reading canonical novels, topics covered will include critical and cultural theories related to world literary study such as orientalism, the role of translation, literary prize culture, non-Western feminisms, and minority studies. Students will read a challenging and engaging range of texts, including novels, essays, short stories and travelogues produced by artists engaging with diverse geographic and cultural backgrounds drawn from the Arab World, Turkey, the Indian subcontinent, as well as from diaspora communities in Europe and America. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, LCC, WAC, GLIT, GCHF, GSPE **ISP:** AIS

EGL 253 - Narratives of Haunting in US Ethnic Literature

Course Units: 1.0 This course examines the theme of haunting in contemporary US ethnic literature. With this theme in mind, we will investigate the following questions throughout the trimester: Why is haunting such a prevalent theme in ethnic writing? What do we mean when we say that a text is haunted? What are the causes of haunting? What is possession? What are some ways to dispossess or exorcise ghosts? What are the functions of ghosts? Is there such a thing as a good haunting? What are their messages to us? How do we listen to ghosts? Authors include Lan Cao, Nora Okja Keller, Maxine Hong Kingston, Cynthia Ozick, Toni Morrison, Sandra Cisneros, and Leslie Marmon Silko. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, JCHF, JLIT **ISP:** AMS, GSW

EGL 254 - Discourses on the Viet Nam/American War

Course Units: 1.0 This class will examine various perspectives on "The Vietnam War," or, as the people of Viet Nam call it, "The American War." In our archeological exploration into the nature of knowledge about this period in Viet Nam/U.S. history, we will not privilege one perspective over another. Rather, we will examine the diverse political, ideological, and moral positions from which various groups, such as the U.S. government, U.S. soldiers, U.S. citizens, the North Vietnamese people, and the South Vietnamese people, perceive this historic conflict. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, GCHF, GLIT **ISP:** AIS, AMS

EGL 255 - Asian American Literature and Film

Course Units: 1.0 If you are interested in the diverse history of Asian immigration in the U.S., take this course. Together as a class, we will examine major historical moments in Asian America: the first wave of Asian immigration in the mid-nineteenth century, the anti-Asian laws of the late nineteenth century, the Japanese internment during the Second World War, the emergence of Asian American studies during the 1960s Civil Rights Movement, Southeast Asian refugees after the Viet Nam/American War, and the contemporary turns to the transnational and the pan ethnic. To cover these historical moments, we will read the following texts: Island: Poetry and History of Chinese Immigrants on Angel Island, Eat a Bowl of Tea, Farwell to Manzanar, When Broken Glass Floats, American Born Chinese, and American Son. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AIS, AMS, FLM

EGL 256 - Southeast Asian-American Experience

Course Units: 1.0 This course examines the diverse literatures, histories, and cultures of the Vietnamese, Cambodian, Hmong and Laotian through the lens of war, migration, and return. Specific attention will be paid to how the War in Vietnam spread to neighboring countries such as Cambodia and Laos, resulting in mass migration of people from Southeast Asia to the West, specifically the United States. We will examine the literatures, oral testimonies, films, and music created by Southeast Asians in America. Possible authors include: Andrew Lam, Bich Minh Nguyen, Le Thi Diem Thuy, Loung Ung, Chanrithy Him, Kao Kalia Yang, Mai Neng Moua, and Burlee Vang. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AIS, AMS

EGL 262 - Global Modernisms

Course Units: 1.0

While traditionally modernism has been considered a largely European and North American affair, in recent years scholars have sought to contest and expand this canon. New research has shown that modernism existed all over the world, from Africa and Latin America, to the South Pacific and East Asia, and on all continents in between. This course introduces students to a new globally expanded understanding of modernism, while asking them to actively contribute to the ongoing expansion of the canon. We will work with new scholarship and archival materials, in order to better understand what happens to modernism as it spreads around the world.
Writers may include African writers such as Léopold Sédar Senghor, and Wole Soyinka; Caribbean writers Claude McKay and Aimé Césaire; Japanese poets, Hirato Renkichi and Chika Sagawa; Chinese writers such as Lu Xun and Eileen Zhang; Indian writers from Tagore and the Indian Progressive Writers Association to the 1960s avant-gardes; and Turkish modernists including Ahmet Hamdi Tanpınar and the Garip poets.

Students will have the opportunity to work with texts in any languages they may read, or to work exclusively in English (including in translation). By exploring literary criticism on modernism in its historical and global contexts, students will gain an understanding of major debates which have shaped modernist studies across the twentieth century including New Criticism, feminist studies, postcolonial studies, as well as more recent debates on the global turn including weak theory and "bad" modernisms. Students will also improve their writing and independent research skills through an anthology project that invites them to contribute to the ongoing canonization of global modernist texts through producing scholarly annotations, introductions, and digital editing. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, LCC, WAC, GLIT, GCHF, GSPE **ISP:** AIS

EGL 266 - Black Women Writers

Course Units: 1.0 This course provides an introduction to the major themes and concerns of twentieth- and twenty-first century African American women writers. We begin in the 18th century and move quickly to the 20th and 21st. We will examine the ways in which black womanhood is characterized through intersecting categories of race, gender, class, sexuality, and empire. We will explore how selected authors wrestle with stereotypical images of African American women, examine the connections between black womanhood, community, and empire, and discuss the benefits and limitations of the concept of "black women's writing." Possible writers include Frances Harper, Maria Stewart, Anne Spencer, Zora Neale Hurston, Gwendolyn Brooks, Toni Morrison, Audre Lorde, Gloria Naylor, Octavia Butler, and others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM **ISP:** AFR, AMS, GSW

EGL 268 - Staging Black Feminisms

Course Units: 1.0 This course considers the feminist and anti-racist practices of Black female dramatists, placing their plays within their cultural contexts. We will examine the ways in which these works construct Black feminist histories,

genealogies, and cultures while challenging racial and sexual hierarchies in both American society and artistic canons. Each week, students will read a landmark dramatic text by a Black female playwright as well as seminal sociological texts and scholarly studies that contextualize the work within broader artistic and social movements. Through discussions, field trips including attendance at theatrical performances and other cultural events, reading responses, and a final presentation based on individual research, students will hone their thinking about the development of Black female voices in American dramatic literature and society. **Cross-Listed:** SOC 209 and ATH 248 **Prerequisite(s):** One 100-level English ourse or a score of 5 on the AP English Language or Literature and Composition test. **CC:** SOCS, HUL, HUM, JCAD, JCHF, JLIT, JSPE **ISP:** AFR, GSW

EGL 269 - New Women around the World

Course Units: 1.0 The idea of the New Woman emerged around the world in the first half of the twentieth century. From Beijing to Berlin, Tokyo to Istanbul, women became visible as chorus girls, urban migrants, starlets, citizens, freedom fighters, consumers, and leisure seekers in new public spaces. This class will examine how literature represented and responded to the global phenomenon of the New Woman, tracing how various national, racial, and colonial contexts gave rise to distinct iterations of the New Woman and examining the linkages among the many geographical and political regions in which she appeared. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** JLIT, JCHF, WAC **ISP:** AFR, AIS, AMS, GSWS

Two 200-level Creative Writing Workshops in two different genres (Poetry, fiction, creative nonfiction, playwriting, screenwriting)

Poetry

EGL 242 - Experimental Writing Workshop

Course Units: 1 Experimental writing explores language as a medium in unexpected and often surprising ways. This course will focus primarily on poetry, though poetry defined somewhat broadly, including mixed media, visual, and prose poetry. We'll read a variety of experimental texts, using them as launch points for our own experimental writing practices. This generative workshop will focus on the creation of new work using experimental techniques, while learning to engage deeply in reflective reading practices with each other's work. We'll experiment with constraint, computational poetry, hybrid and mixed media poetry, and generally be open to as many processes and approaches as we can. The goals of our workshop time, and our readings, will be to encourage you to develop new modes, skills, and techniques for writing creatively. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD

EGL 243 - The Poetic Object Workshop: Experimental Book Forms

Course Units: This course will explore the intersection between poetry and visual arts as a space for literary artistic production. Through demonstration and assignments students will write poetry and create prints and objects that integrate visual and textual elements. Students will practice combiningstructure, visual, and textual content in meaningful ways. **Cross-Listed:** AVA 353 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test or AVA 150 , or AVA 251 or AVA 252 or instructor's permission

EGL 293 - Workshop in Poetry

Course Units: 1.0 This is a course for students with a serious interest in writing poetry. Classes will be divided between discussions of literary technique, workshop critiques of student writing, and consideration of the work of several

contemporary poets. Students will prepare a final portfolio of ten to fifteen pages. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC **ISP:** AMS

Fiction

EGL 284 - Interactive Fiction Workshop

Course Units: 1 Interactive fiction is storytelling that uses technology to create an interactive "reading" experience, requiring the reader to make choices that influence the plot. In this course you are going to read, critique, and create interactive fiction. You'll develop your storytelling skills, and along the way you'll learn some programming concepts, and history of narrative. video games. We'll also consider how race, gender, class, sexuality, and (dis)ability shape our experiences of these games as players and writers. No previous CS experience is necessary. Students will need access to a laptop for class. **Cross-Listed:** CSC 084 **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of instructors. **CC:** HUL, HUM, SET, WAC, JCAD, JETS, JLIT **ISP:** AMS, GSW, STS

EGL 294 - Workshop in Fiction

Course Units: 1.0 This is a course for students with a serious interest in writing fiction and imaginative prose. We'll read and discuss plenty of contemporary fiction, with a particular focus on the short story, considering each piece from a writer's perspective: How is it put together? What makes it unique and interesting? How and what can we learn or steal from it for our own writing? Students will put into practice what we discover in our reading, developing skills at building characters, exploring narrative form, and honing their use of image and voice. Students will complete and revise a variety of exercises and creative pieces, including three short stories. Much of class time will be devoted to workshop discussion of student stories. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC

Creative Non-fiction

EGL 291 - From the Drama Desk: Performance, Culture & Creativity Drama Criticism Workshop

Course Units: 1.0 This is an intensive and practical course on reading and writing dramatic criticism. A look at the concepts and practices of theater criticism in American Theater begins with a discussion of major theories of Western drama, from Aristotle to Artaud. Through the reading and discussion of contemporary examples of dramatic criticism and directed studies in techniques of journalistic writing students will gain an understanding of the nature and function of a theater review and an ability to critically view theater productions. Writing will include research essays, response papers and critical reviews of play scripts as well as performances on campus and at professional theaters. **Cross-Listed:** ATH 240 **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUM, LCC, WAC, JCAD, JCHF, JLIT, JSPE

EGL 295 - Workshop in Creative Non-Fiction

Course Units: 1.0 In this workshop in creative nonfiction, students write personal stories and investigate the personal as an artistic space for deep reflection, healing, empowerment, and playfulness. We study CNF pieces written by both established practitioners of the genre and fellow students. Ultimately, we explore the fraught boundary between fiction and nonfiction and examine the implications in Dickinson's advice: 'Tell all the truth but tell it slant.' **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of instructor. **CC:** HUL, HUM, WAC

Playwriting

ATH 320 - Playwriting: Script to Performance

Course Units: 1.0 This playwriting course will focus on the creation and development of original and adapted dramatic work. Students will study basic techniques of structure, dialogue, character-development, story-telling, theatricality and creative voice. Students will generate and rework scenes in and out of class. As a playwriting lab, students will workshop, critique and help develop each other's craft through creative writing exercises and prompts. The class will conclude with staged readings of polished work. **CC:** HUM, JCAD, JLIT, WAC

Screenwriting

EGL 289 - The Essay Film Workshop

Course Units: 1.0 Deriving its meaning from the French *essayer*: to try; to attempt, the essay film is an experiment in form and expression. Weaving together elements of fiction and documentary, the essay film foregrounds the subjectivity of the filmmaker and engages the viewer as participant and collaborator. Relying heavily on montage, the essay film often employs found footage as well as cinema verité techniques-where the camera acts as quasi-therapist, eliciting new performances and confessions. In an approach combining theory and practice, we will explore the many aspects of the essay film genre. Foundational readings by Michel de Montaigne, Georg Lukács, and Phillip Lopate will be paired with visual essay by Issac Julian, Chantal Akerman, Mona Hatoum, and Marlon Riggs among others. Experimenting with form and method, students will produce weekly writings and visual exercises and an extended essay film. **Cross-Listed:** FLM 289 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, FLM

EGL 296 - Screenwriting Workshop

Course Units: 1.0 This course is designed to introduce student to the art and craft of screenwriting. In addition, to screenplay format, we will investigate character development, structure, narrative style, dialogue, and techniques of visual storytelling. Screenings, screenplay analysis, outside reading, in-class discussion, as well as guest lectures will broaden students' understanding of the screenwriting process. By the end of the term, students will have completed several short scenes and one short screenplay. **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Compositon test, or permission of the instructor. For Film studies students, EGL 150 is recommended. **CC:** HUM, WAC, JLIT, JCAD **ISP:** AMS, FLM

One 200-level course that is either a creative writing-cognate course or a third creative writing workshop:

CW-cognate courses:

EGL 245 - Experimental Texts

Course Units: 1.0 Experiments in writing have a long history and are often some combination of fascinating, weird, complex, risky, and wild. This course will cross genre-boundaries in order to discover what it means to read, write, and experience "experimental" literature, which usually attempts to challenge the traditions, formal devices, and audience expectations of literary engagement. With a focus on the relationship between form and content as well as attention paid to the limitations associated with strict categorical delineations of literary and cultural objects, we will spend the term analyzing and producing experimental texts. We will spend time considering primarily contemporary textual responses to cultural, social, and political shifts and the ways in which such shifts inform and affect our reading practices. Readings will include poetry fiction, theory, and contemporary media. Writing assignments will include interpretive and creative works. Collaborative projects will also be a part of this course. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 247 - Studies in Modern Poets: Bob Dylan and Gary Snyder

Course Units: 1.0 This course is a study in the role of history in the ways that two poets, Bob Dylan and Gary Snyder, conceive of their work. Dylan's fascination with the music and history of America from the run-up to the Civil War through Reconstruction and the Great Depression, shapes his sense of useful subject matter, his development of the personae that inhabit his lyrics, and his range of rhetoric, from the nostalgic to the prophetic; it also places him squarely within contemporary controversies about the political uses of history. Gary Snyder's understanding that history extends to the natural world and our relationship to it is integral to his complex enterprise as a writer of poems and essays, as an activist and educator, and as a point of connection in a web of similarly concerned thinkers. His conception of history as a matter of bioregions rather than of nations and of tradition as a matter of wisdom rather than of identity unsettles the usual divisions between art, politics and science as well as our conventional expectations of poetry. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD, JLIT **ISP:** AMS, REE

EGL 250 - The Beats and Contemporary Culture

Course Units: 1.0 An examination of the writers of the Beat Generation (including Allen Ginsberg, Jack Kerouac, Gary Snyder, Edward Sanders) and of their lasting influence on American popular culture. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, GLIT, GCAD **ISP:** AMS, GSWS, REE

EGL 283 - Pilgrims, Flâneurs, & Pranksters: The Walk in Literature

Course Units: 1.0 From the poems of William Wordsworth to contemporary novels such as Teju Cole's *Open City,* literary narratives often feature journeys taken on foot. Among other things, a walk, in literature, can structure plot, serve as metaphor, or anchor a stream-of-consciousness narrative within a physical setting. A walker, like a reader, is a consumer of sights. But she is also a producer of thoughts, words, and creative pathways through the world. In this course we will investigate the relationships between walking, thinking, reading, and writing, considering the ways we move through spaces (natural, urban, public, solitary) and the forces and questions that shape our experiences in those spaces. Our texts will include standard novels and essays, as well as work by walking artists like Richard Long, audio-video artist Janet Cardiff, and street artists, for whom the world is the page and the walker is the reader. You will write traditional academic papers, but we will also walk, and some assignments will encourage you to create walking texts of your own. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT

EGL 280 - Nature and Environmental Writing

Course Units: 1.0 This course will focus on the traditions of nature and environmental writing in the American context, with an emphasis on the social and cultural dynamics of the environment and environmental action. Among other questions, we will ask ourselves: How do class, gender, and race enter into the nexus of social interactions that shape our environment? What is the place of literature in community, literacy, and environmental activism? What are the connections between the ways we speak and write about the environment and our actions toward the environment? How does the wilderness concept affect the ways citizens have access to public spaces? We will consider the concept of "nature" as we move through the course, culminating (if you like) with some nature writing of your own. Readings may include Thoreau; Carson; Leopold; Kingsolver, and selections from *Reading the Roots: American Nature Writing Before Walden*; *Colors of Nature*; Lauret Savoy, T*race: Memory, History, and the American Landscape*; and F. Marina Schauffler, *Turning to Earth: Stories of Ecological Conversion.* **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, ENS, STS

ISC 109 - Making Meaningful Writing

Course Units: 1 This course is an opportunity to reflect on your life as a writer, and enhance your ability to talk with other people about their writing. We'll study the role of personal voice and narrative technique in academic contexts and beyond, paying special attention to themes of audience, genre, and situation, as well as creativity, purpose, motivation, and the role of research in the writing process. We'll think deeply about how we write and why, and we'll spend significant time sharing our writing and our writing practices. **CC:** WAC-R

ISC 300 - Students Call for Social Change: Write to Change the World

Course Units: 1.0

Storytelling is powerful. Storytelling can change the way we see reality, and ourselves in it. Storytelling can inspire; it can change lives. In this class, students will write a personal narrative that calls for social change. Each writer will grapple with a unique and personal issue that has significantly impacted their life. They will set out to express their call to action so as to inspire the next wave of changemakers.
This is a highly participatory class in which students work to support one another through workshop-based activities and constant reflection, writing, and editing. Students will work in teams to write, edit, typeset, market, and design their book. This book will to be published through Amazon's platform known as "Createspace." In the process, students will gain the skills needed to communicate to a broader public and become published authors. Students will discuss the meaning of social change in their everyday lives and examine what they can learn from other young social changemakers by reading books, such as Adam Braun's The Promise of a Pencil: How an Ordinary Person Can Create Extraordinary Change, and viewing films like The Clean Bin Project and Living on One Dollar. They will also write a journal to reflect on their own growth throughout the course. **CC:** HUM, JCAD, WAC

CW workshops (See above):

ATH 320 - Playwriting: Script to Performance

Course Units: 1.0 This playwriting course will focus on the creation and development of original and adapted dramatic work. Students will study basic techniques of structure, dialogue, character-development, story-telling, theatricality and creative voice. Students will generate and rework scenes in and out of class. As a playwriting lab, students will workshop, critique and help develop each other's craft through creative writing exercises and prompts. The class will conclude with staged readings of polished work. **CC:** HUM, JCAD, JLIT, WAC

EGL 242 - Experimental Writing Workshop

Course Units: 1 Experimental writing explores language as a medium in unexpected and often surprising ways. This course will focus primarily on poetry, though poetry defined somewhat broadly, including mixed media, visual, and prose poetry. We'll read a variety of experimental texts, using them as launch points for our own experimental writing practices. This generative workshop will focus on the creation of new work using experimental techniques, while learning to engage deeply in reflective reading practices with each other's work. We'll experiment with constraint, computational poetry, hybrid and mixed media poetry, and generally be open to as many processes and approaches as we can. The goals of our workshop time, and our readings, will be to encourage you to develop new modes, skills, and techniques for writing creatively. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD

EGL 243 - The Poetic Object Workshop: Experimental Book Forms

Course Units: This course will explore the intersection between poetry and visual arts as a space for literary artistic production. Through demonstration and assignments students will write poetry and create prints and objects that integrate visual and textual elements. Students will practice combiningstructure, visual, and textual content in meaningful ways. **Cross-Listed:** AVA 353 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP

English Language or Literature and Composition test or AVA 150 , or AVA 251 or AVA 252 or instructor's permission

EGL 284 - Interactive Fiction Workshop

Course Units: 1 Interactive fiction is storytelling that uses technology to create an interactive "reading" experience, requiring the reader to make choices that influence the plot. In this course you are going to read, critique, and create interactive fiction. You'll develop your storytelling skills, and along the way you'll learn some programming concepts, and history of narrative. video games. We'll also consider how race, gender, class, sexuality, and (dis)ability shape our experiences of these games as players and writers. No previous CS experience is necessary. Students will need access to a laptop for class. **Cross-Listed:** CSC 084 **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of instructors. **CC:** HUL, HUM, SET, WAC, JCAD, JETS, JLIT **ISP:** AMS, GSW, STS

EGL 289 - The Essay Film Workshop

Course Units: 1.0 Deriving its meaning from the French *essayer*: to try; to attempt, the essay film is an experiment in form and expression. Weaving together elements of fiction and documentary, the essay film foregrounds the subjectivity of the filmmaker and engages the viewer as participant and collaborator. Relying heavily on montage, the essay film often employs found footage as well as cinema verité techniques-where the camera acts as quasi-therapist, eliciting new performances and confessions. In an approach combining theory and practice, we will explore the many aspects of the essay film genre. Foundational readings by Michel de Montaigne, Georg Lukács, and Phillip Lopate will be paired with visual essay by Issac Julian, Chantal Akerman, Mona Hatoum, and Marlon Riggs among others. Experimenting with form and method, students will produce weekly writings and visual exercises and an extended essay film. **Cross-Listed:** FLM 289 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, FLM

EGL 291 - From the Drama Desk: Performance, Culture & Creativity Drama Criticism Workshop

Course Units: 1.0 This is an intensive and practical course on reading and writing dramatic criticism. A look at the concepts and practices of theater criticism in American Theater begins with a discussion of major theories of Western drama, from Aristotle to Artaud. Through the reading and discussion of contemporary examples of dramatic criticism and directed studies in techniques of journalistic writing students will gain an understanding of the nature and function of a theater review and an ability to critically view theater productions. Writing will include research essays, response papers and critical reviews of play scripts as well as performances on campus and at professional theaters. **Cross-Listed:** ATH 240 **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUM, LCC, WAC, JCAD, JCHF, JLIT, JSPE

EGL 293 - Workshop in Poetry

Course Units: 1.0 This is a course for students with a serious interest in writing poetry. Classes will be divided between discussions of literary technique, workshop critiques of student writing, and consideration of the work of several contemporary poets. Students will prepare a final portfolio of ten to fifteen pages. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 294 - Workshop in Fiction

Course Units: 1.0 This is a course for students with a serious interest in writing fiction and imaginative prose. We'll read and discuss plenty of contemporary fiction, with a particular focus on the short story, considering each piece from

a writer's perspective: How is it put together? What makes it unique and interesting? How and what can we learn or steal from it for our own writing? Students will put into practice what we discover in our reading, developing skills at building characters, exploring narrative form, and honing their use of image and voice. Students will complete and revise a variety of exercises and creative pieces, including three short stories. Much of class time will be devoted to workshop discussion of student stories. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC

EGL 295 - Workshop in Creative Non-Fiction

Course Units: 1.0 In this workshop in creative nonfiction, students write personal stories and investigate the personal as an artistic space for deep reflection, healing, empowerment, and playfulness. We study CNF pieces written by both established practitioners of the genre and fellow students. Ultimately, we explore the fraught boundary between fiction and nonfiction and examine the implications in Dickinson's advice: 'Tell all the truth but tell it slant.' **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of instructor. **CC:** HUL, HUM, WAC

EGL 296 - Screenwriting Workshop

Course Units: 1.0 This course is designed to introduce student to the art and craft of screenwriting. In addition, to screenplay format, we will investigate character development, structure, narrative style, dialogue, and techniques of visual storytelling. Screenings, screenplay analysis, outside reading, in-class discussion, as well as guest lectures will broaden students' understanding of the screenwriting process. By the end of the term, students will have completed several short scenes and one short screenplay. **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Compositon test, or permission of the instructor. For Film studies students, EGL 150 is recommended. **CC:** HUM, WAC, JLIT, JCAD **ISP:** AMS, FLM

One Seminar-level workshop (300- or 400-level):

CW seminars:

EGL 300 - Jr. Seminar: Poetry Workshop

Course Units: 1.0 A workshop course for students with some experience and a serious interest in the writing of poetry. **Prerequisite(s):** It is strongly recommended, although not required, that students have already taken EGL 293 . One 100-level and two 200-level English courses or instructor's permission. **CC:** HUL, HUM, WAC

EGL 301 - Jr. Seminar: Fiction Workshop: Writing Activist Fiction

Course Units: 1.0 In this intermediate-level fiction workshop, students will build skills in fiction writing and critiquing fiction, compile a portfolio of short stories, and gain insight to the landscape of contemporary creative writing. Our primary focus will be on student writing. Reading assignments will contribute to understanding contemporary fiction writing, with special attention on the short story and the craft of writing, from idea generation through revision. Some sections of this course will focus on a particular skill or aspect of the fiction writer's craft, such as writing dialogue, using research to write better fiction, or developing complex characters. Other sections will focus on a particular theme or subgenre such as the contemporary ghost story, activist fiction, autofiction, climate fiction, or historical fiction. Contact the instructor or the English Department for details on particular sections. **Prerequisite(s):** It is strongly recommended that students have already taken EGL 294. One 100-level and two 200-level English courses or instructor's permission. Previous workshop experience is recommended. **CC:** HUL, WAC, HUM

EGL 400 - Sr. Seminar: Advanced Poetry Workshop

Course Units: 1.0 An advanced workshop course in the writing of poetry. **Prerequisite(s):** It is strongly recommended that students have already taken EGL 293 , EGL 300 . Six English courses or instructor's permission. **CC:** HUL, HUM, WS

EGL 401 - Sr. Seminar: Advanced Fiction Workshop

Course Units: 1.0 An advanced workshop course in the writing of fiction. **Prerequisite(s):** It is strongly recommended that students have already taken EGL 293 , EGL 301 . Six English courses or instructor's permission. **CC:** HUL, HUM, WS

NOTE: a second 300/400 level workshop course may be substituted for one of the 200-level CW courses with permission.

English ID, B.A.

Requirements for Interdepartmental Majors

Students wishing to declare an ID major should confer with both Department Chairs to explain how their intellectual interests or plan of study might integrate the two disciplines.

English ID Majors have an 8-course requirement, which includes one 100-level (100-189), one "Confronting the Canon" course (190-199), a 200-level course tagged as BIPOC literature, and a choice between either a Shakespeare (200-201) or a pre-1700 course (202-215). Along with three 200-level electives, ID majors finally take a seminar of choice, either at the 300-or 400- level, while being sure to fulfill the college requirement for a WS (Senior Writing experience).

English ID majors take eight courses, including the required courses below:

One 100-level course (100-189)

EGL 100 - The Study of Literature: Poetry

Course Units: 1.0 Students will explore the art of poetry by examining a selection of poems from at least three cultures and by considering how poetry conveys its complex meanings through voice, image, rhythm, as well as formal and experimental structures. Particular attention will be given to developing reading and writing skills. 100-level courses are open to all students. **CC:** HUL, WAC, HUM

EGL 101 - The Study of Literature: Fiction

Course Units: 1.0 Students will explore fictional works from at least three cultures. Emphasis will be placed on exploring the art of narrative - considering the ways stories get told and the reasons for telling them. Attention may be paid to such concerns as narrative point of view, storytelling strategies and character development, the relationship between oral and written narrative traditions, and narrative theory. Particular attention will be given to developing reading and writing skills. 100-level courses are open to all students. **CC:** HUL, WAC, HUM, JLIT

EGL 102 - The Study of Literature: Dramatic Literature and Social Justice

Course Units: 1.0

In this course we will explore how plays engage audiences and readers in fundamental questions about human identity. Not only do plays acted on the stage abound in examples of characters who switch places or are mistaken for one another, they also provide a forum for individual characters to question their relationships with the people and culture that surround them. Even as plays stage the most private of feelings in a public setting, they also suggest that human interactions frequently involve playing a role. Dramatic literature puts front and center the ways in which many forms of identity-including gender and race-are socially constructed. At the same time that this course offers a wide-ranging introduction to the forms of dramatic literature, it will pay special attention to the ways in which play present questions of social justice. Who is given and denied agency? How do plays stage and raise awareness of problems of inequity? How do plays both reinforce and critique the stereotypes connected to gender, race and mental illness.
As we explore to the different forms of identity negotiated on the stage, we will be alert to how our own diverse experiences shape our experiences as readers and audience members. We will ask how plays such as *Antigone, Much Ado about Nothing,* and *A Doll's House* reveal the constrictions of gender roles. We will explore the varied ways in which plays such as *A Raisin in the Sun, Clybourne Park, Fences,* and *Sweat* represent the racism that interferes with the full participation in the American Dream, seen in both employment and housing. And we will explore how *Water by the Spoonful* and *The Flick* represent the struggles of drug addiction, PTSD, anxiety, and depression in a diverse American Society .

100-level courses are open to all students. **Cross-Listed:** ATH 104 **CC:** HUL, WAC, HUM, JLIT

EGL 110 - The Poetic Process

Course Units: 1.0 This course will introduce students to the pleasures of poetry by way of the process of creating it. Students will read and discuss poems by a diverse range of contemporary poets, respond to writing prompts that clarify the structure of these poems while encouraging individual experimentation, and complete a final portfolio of carefully revised assignments. 100-level courses are open to all students. **CC:** HUL, WAC, HUM, JCAD, JLIT

EGL 111 - Introduction to Creative Writing

Course Units: 1

In this multi-genre creative writing course, we'll read and write poetry, fiction and/or creative nonfiction, considering everything we read from a writer's perspective, asking what we can learn from it for our own writing. We'll read work by writers from diverse identities, perspectives, and aesthetic approaches; complete many writing exercises; and develop longer drafts outside of class. Students will gain editorial skills and will regularly share their writing with the group. This introductory course is appropriate for anyone who is curious about using language as a creative medium. 100-level course are open to all students. **CC:** HUL, WAC, HUM, JCAD, JLIT

EGL 115 - Black Lives Matter Poetry

Course Units: 1

This course examines poetry that is part of the Black Lives Matter movement. We will investigate poetry as a form of protest for African Americans in the 21st Century and examine how it is used to resist white supremacy and violence against Black communities. Poet: Jericho Brown, Danez Smith, Ross Ray, Eve L. Ewing, Claudia Rakine, and more. Also, counts toward AFS, AMS.
100-level courses open to all students. **CC:** HUL, LCC, JCAD, JLIT, WAC **ISP:** AFR, AMS

EGL 116 - Poetry of People and Places

Course Units: 1

In the song "In My Life," John Lennon sings "Though I know I'll never lose affection / for people and things that went before / I know I'll often stop and think about them." The speaker sings about "people and things" that have shaped and continue to inform his identity. In this class, we will study poems that impact a person's sense of self and home. The poems we will read will explore history, family, place, race, class, gender, as well as love, sex, death, mourning, and joy, as these are the "stuff of life."
100-level courses are open to all students. **CC:** HUL, HUM, WAC, GCAD, GLIT

EGL 117 - Queer Poetry

Course Units: 1

This class will examine and interrogate poetry-its form, its content, and everything in between-with respect to queer poetic works. We will put diction, voice, rhythm, imagery, and form in conversation with social, cultural, and political issues that surround queer poetry. From single foundational poems to contemporary poetry collections, we will dive into the relationship between poetry and queer identity. This class has critical, creative, and collaborative components and you will be asked to do them all.
100-level courses are open to all students. **CC:** HUL, HUM, JCHF, JLIT, WAC **ISP:** GSW

EGL 119 - Decolonial Poetries

Course Units: 1

In this course we'll read and critically engage with contemporary poets writing predominantly in English from a decolonial perspective. From the intersection of poetics, aesthetics, decolonial (and anti-colonial) theory, and social justice in the arts, we will explore what a poetics of reading and writing decoloniality entails. By centering our exploration on poets who write from ongoing colonial experiences, we'll build an understanding of the work of poetry in decolonial imaginings. We will explore how decolonial poetic practices work against racism, colonialism, and other contemporary systems of oppression, and consider how decolonial poets respond to and engage with these systems both overtly and through their aesthetics. Students will develop an understanding of both traditional and experimental poetics, along with decolonial theories.
100-level courses opne to all students.

EGL 120 - Fictional Forms

Course Units: 1

This course introduces students to a variety of fictional forms. We consider what makes prose into literary fiction and develop an arsenal of key terms and ideas about narrative that will lay the groundwork either for further study or for lifelong learning and appreciation. Our primary sources range from oral stories to novels from around the globe to recent experiments in fiction, with particular emphasis on writers from underrepresented groups.
100-level courses are open to all students. **CC:** HUL, WAC, HUM

EGL 140 - Introduction to Digital Studies: Digitizing the Past

Course Units: 1 The digital age and the medieval period-two disparate phases of history-may at first blush appear to have nothing in common. Yet, as medieval scholars have shown, this myth is best dispelled in and through the medieval manuscript, a physical object representing the convergence of text and technology in its earliest form. Using the medieval manuscript as a case study, this class will introduce students to digital topics such as online storytelling, digital archives and curation, online exhibits, data interpretation, and more. Along the way, students will learn skills of technical literacy, written analysis, and archival interpretation using programs such as Omeka, Artsteps, Audacity, Voyant Tools, and StoryMaps. **Cross-Listed:** SMT 140, AAH **CC:** HUL, WAC, HUM

EGL 150 - Film Form and Analysis

Course Units: 1.0 **(Spring: Troxell)** In this course we will examine elements of film form such as cinematography, sound, editing, lighting, mise-en-scene, and narrative structure. Considering film an art form, a commercial product, a psychological experience, and a social practice, we will also pay close attention to issues of genre, performance, intertextuality and authorship. 100-level courses are open to all students. **CC:** HUL, WAC, HUM

EGL 188 - Cyborgs!

Course Units: 1 Cybernetic organisms, or "cyborgs," represent the ultimate integration of biology and technology since these are organisms living with abiotic parts. This exciting new interdisciplinary course will provide an introduction to the biological and computer science concepts fundamental to the development of cyborg technology as well as critical evaluation of the consequences of introducing such technology in society. Students taking this course will not just be trained how to develop cyborg technology, but whether or not such technology should be developed for society. **Cross-Listed:** BIO 088, CSC 088 **CC:** HUL, HUM, SCLB, SET, WAC, JDQR, JETS, JLIT JNPS

Note: These courses emphasize close reading of primary texts and help students acquire the vocabulary to speak and write clearly and intelligently about literature. The texts are chosen by the instructor of each section. Detailed descriptions are available before pre-enrollment each term.

*See explanation of credit and placement for students who receive a 5 on their AP exams in English literature or English language.

One "Confronting the Canon" course (between 190-199)

EGL 190 - Confronting the Canon: Reimagining Beowulf

Course Units: 1.0 In "Reimagining *Beowulf*," we'll examine one of the oldest and most enduring works of Old English literature, *Beowulf.* Through critical analysis and discussion, students will confront *Beowulf* not only as an epic poem but also as a cultural artifact that has evolved through time, shaping and being shaped by its place in the British literary canon. Exploring the complexities of representation, we'll examine how the text explores hierarchies of identity, power, religion, class, race, and gender. Moreover, this course challenges students to critically engage with *Beowulf*, questioning conventional interpretations and seeking alternative narratives within the text. By exploring marginalized perspectives and overlooked themes, our aim will be to recuperate and amplify voices often silenced in traditional analyses of this canonical text. EGL 190 may alternatively count as a pre-1700 credit for English majors. 100-level courses are open to all students. **CC:** HUL, WAC, HUM, JLIT

EGL 191 - Confronting the Canon: The Modernist Edition

Course Units: 1

Modernism, the literary movement that dominated in the West from about 1890-1950, has been a stronghold of white male privilege, subtended by deep seated anxieties about other bodies. In this section of "Confronting the Canon," we will consider the complicated legacy of modernism and its influence on more recent literary works; the often troubling personal and political legacy of modernist writers; the relationship between the modernist canon and perpetuation of white supremacy; and the ways in which modernism, and the scholarship about it, bolster a rigid heteronormative patriarchy. "Confronting the Canon" courses are cornerstones of the new English curriculum and required beginning with majors/minors in the class of 2025.
100-level courses are open to all students. **CC:** HUL, HUM, WAC **ISP:** AFR, GSW

EGL 192 - Confronting the Canon: What is an Empire?

Course Units: 1 The study of the relationship between literature and empire has overwhelmingly focused on a small core of European empires. This class will expand understanding of the relationship between imperialism and literature by examining novels, epics, and allegories written in entangled colonial networks in which Europe is influential, but not the sole player. Readings for this class will focus on empires located on the continents of Africa and Asia broadly defined, including the Zulu, Ottoman, Russian, Japanese, and Soviet
imperial formations. **CC:** HUL, HUM, WAC, GLIT, GCHF, GSPE **ISP:** AFR, AIS, GSWS

EGL 193 - Confronting the Canon: Confronting the Hero's Journey

Course Units: 1

This course will challenge traditional renderings of various heroic tales through the double-edged lens of queer and feminist theory. Our discussions will draw from various scenes and film screenings of classic stories that may include *The Epic of Gilgamesh,* the *Bhagavad Gita,* Ovid's *Metamorphoses*, Aeschylus's trilogy *The Oresteia*, Homer's *Odyssey*, Virgil's *Aeneid*, the story of Jesus, *Beowulf*, and several fairy tales, as well as slightly more contemporary classics such as Herman Hesse's *Siddhartha, the Lord of the Rings, Star Wars, The Matrix, Harry Potter,* and *The Wizard of Oz*, among others. "Confronting the Canon" courses are cornerstones of the new English curriculum and required beginning with majors/minors in the class of 2025. Also counts toward GSW.
100-level courses are open to all students. **CC:** HUL, HUM, JCHF, JLIT, JSPE, WAC **ISP:** GSW

EGL 194 - Confronting the Canon: Confronting Dido's Many Faces

Course Units: 1 This course introduces students to some of the foundational questions raised when interrogating & reconfiguring what has long been considered the traditional, Western literary canon. English classes, in many different educational settings, have an extensive history of perpetuating the "greatness" of texts by white, heterosexual, male authors, often at the expense of those works written by women, writers of color, & queer writers, among other diverse groups. "The Many Faces of Dido" will challenge traditional interpretations of Dido, portrayed in classical works of fiction, poetry, drama, & art. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** GSWS

Note: ID Majors must complete both 100-level courses no later than the winter term of their junior year.

One Shakespeare OR pre-1700 course (between 200-216))

EGL 200 - Shakespeare to 1600

Course Units: 1.0

Shakespeare's works speak to perennial human concerns (ambition, unrequited love, the conflicts between generations), and he has even been lauded as the "inventor of the human." At the same time, his plays come from a very specific cultural milieu; he was a white man who lived in England from 1564-1616. In this course, we will explore the plays written in the first half of Shakespeare's career, collaborating to appreciate the rhetorical devices of Shakespeare's language and to understand the cultural milieu in which his plays were written. Some of the questions that we will ask include: How do structures of political and familial authority affect the characters' conceptions of their roles and duties? What possibilities do the plays offer for female empowerment? To what extent did Shakespeare's stage, which reached audiences of all classes, challenge contemporary conceptions of inherited nobility at a time of increasing social mobility?
Shakespeare's plays have at their center the question of performance; this makes them very well suited to exploring the multifaceted ways in which human identity is social constructed and socially expressed. In our readings of romantic comedies such as *A Midsummer Night's Dream* and *Much Ado About Nothing*, we will ask how both women and men are constricted by gendered expectations of honor. We will also explore the pernicious association between "fairness" and beauty in Shakespeare's time, discovering how expectations about women's supposed sexual and physical purity worked through references to offensive racial stereotypes about contamination. In our discussion of *The Merchant of Venice*, we will pay particular attention to how the privileging of upper-class, Christian men in the play and the

religious othering of Shylock and Jessica contributes to a society in which injustice is hypocritically masked as mercy, and all characters suffer. Our examination of the history plays such as *Henry IV*, Part 1, will attend to the costs of creating an English national identity; in particular, we will explore how racial and gendered othering in these plays defines what it means to be English in way that privilege some and exclude others. **Cross-Listed:** ATH 256 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, WAC, HUM, JLIT

EGL 201 - Shakespeare after 1600

Course Units: 1.0 In this course we will explore plays written in the second half of Shakespeare's career. We will emphasize Shakespeare's great tragedies-works that retain their ability to astound readers and audiences today-but we'll also explore his later comedies, "problem plays," and tragicomic final works. We will collaborate to appreciate the sounds and meaning of Shakespeare's language, to think about the ways he structures plots and creates vivid characters, to understand the cultural milieu in which his plays were written, to make thematic connections across the plays, and to appreciate the plays as both literature and in performance. Shakespearean drama can be challenging to study, but the rewards are lifelong: revelry in language, a strong grounding in theatrical traditions that remain dominant in our culture, a deeper understanding of the actions and values that motivate human beings in society, and an engagement with dramatic works that continue to be reimagined worldwide. **Cross-Listed:** ATH 257 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, JCHF, JLIT, WAC

EGL 202 - Amazons, Saints and Scholars: Women's Writing in the Middle Ages and Renaissance

Course Units: 1.0 This course explores the medieval and early modern female writers of England and France. We will ask: how did women respond in writing to the male-defined literary traditions and conventions of these eras? The course also provides an introduction to some of the major questions and works of feminist literary criticism, including: Why should we read the works of women? What aesthetic standards should we apply when discussing their works? Is there a difference between "masculine" and "feminine" writing? We will focus on six female writers: Marie de France, Christine de Pizan, Elizabeth Carey, Isabella Whitney, Amelia Lanyer, and Mary Sidney. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 203 - The Age of Heroes

Course Units: 1.0 In 410 the Romans abandoned Britain, withdrawing to the continent just as pagan Germanic raiders began to challenge the island's native Picts and Celts. In 1066 the Duke of Normandy crossed the Channel and kicked a Danish king off the throne of a fully Christianized England. In between these two events lies the matter of this course: the subtle and sophisticated literature, art, and culture of early medieval England. We will explore its evolution and wrestle with thorny questions about the significance and meaning it has been accorded over the centuries. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 204 - Plague, Revolt, Religion, and Nation: The Fourteenth Century

Course Units: 1.0 This course explores English literature as it reflects, shapes, and critiques society from the onset of the Hundred Years' War to the overthrow of Richard II (1337- 1400), a turbulent period that includes the Peasants' Revolt, the Black Plague, the rise of English as the language of literature and government, and the proto-Protestant movement known as Lollardy. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 205 - The Road to Canterbury

Course Units: 1.0 This class will focus on Geoffrey Chaucer's seminal work, *The Canterbury Tales*, as a way to introduce the language, culture, and literature of fourteenth-century England. We'll read selections of the Tales, learning the rudiments of written and spoken Middle English along the way. In addition, students will explore the following topics in relation to Chaucer's work: narrative and story-telling, literary authority, social and class status, gender, racial, religious, and sexual difference, cultural memory, and more. 100-level courses are open to all students. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 206 - Gender in Renaissance Literature

Course Units: 1.0 This course explores English Renaissance texts from a variety of genres with an eye to the gender norms that they both created and critiqued. On the one hand, the early modern period offered very distinct roles for men and women. Men were expected to abide by a code of honor that emphasized bravery and action, while women were expected to be chaste, silent, and obedient. On the other hand, there were countless examples of these norms being challenged. Reading plays, poems, speeches, and conduct manuals, we will consider the complexity of their presentations of gender. **Prerequisite(s):** Any 100 level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT **ISP:** GSWS

EGL 207 - White Columns, White Narratives: Archi[text]ure and Race in the Middle Ages

Course Units: This course will examine the relationship between race, architecture, and literary production in the late medieval period (1000-1500). Students will be introduced to premodern critical race studies (PCRS) through the work of scholars who necessarily examine processes of racialization, architectural practice, and literary production in the medieval period. As a class, we'll use PCRS methods to interrogate medieval archi[text]ural narratives for the ways in which they participate in race-craft. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT, JCHF

EGL 208 - Renaissance Drama

Course Units: 1.0 Shakespeare and Marlowe were the Beatles-Stones, Red Sox-Yankees, everybody else-Kanye of their day: moral opposites and aesthetic rivals, but also mutual inspirations and at times even collaborators. Marlowe was the dynamic bad boy, drawn to dark characters mirroring his own troubled soul; Shakespeare, the reclusive genius, who worked in more subtle ways to delineate human behavior and challenge existing power structures. We'll see how they together created one of the world's most dynamic literary forms, modern English drama, and how that drama, along with the drama of their rivalry, continues to inform our own ideas about art and its cultural power. **Cross-Listed:** ATH **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 210 - British Literature: Seventeenth-Century Literature

Course Units: 1.0 This course will look at seventeenth-century literature and culture through the idea of revenge, which became a dominant form in an age of turmoil, injury, and change. We will begin with the early revenge plays of Shakespeare, Tourneur, Marston, Ford, and Webster, proceed through the cosmic revenge of Satan in *Paradise Lost*, and end with the ironic revenge exacted on moral goodness by the Restoration poets, playwrights, and philosophers. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 211 - Milton

Course Units: 1.0 The two sides of Milton - the high humanist poet, author of the greatest epic in English and one of the greatest religious poems in any language, and the Puritan revolutionary, defender of regicide and champion of the English commonwealth. The goal of the course will be to see if the two sides can be held separate, or if they must be seen as complementary. We will read Paradise Lost at the rate of one book per week, always trying to relate the two sides of the poet. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** REL

EGL 212 - The Restoration

Course Units: 1.0 This course will closely examine the culture that produced both the first official poet laureate of England, John Dryden, and the most notoriously libertine poet in English, the Earl of Rochester. Also appearing will be the first English woman to make a living from literature, Aphra Behn; the wittiest playwrights in English dramatic history (Wycherley, Etherege, Congreve); John Milton; some very early English novels; and some pretty good philosophers, including Thomas Hobbes, John Locke, and maybe even Sir Isaac Newton. All that and the Great Fire of London, outbreaks of the plague, several wars, and major revolutions in politics and science. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 213 - Circum-Atlantic Revolutions

Course Units: 1.0 This course will draw on literary and historical writings and artwork that emerged before, during, and after the three revolutions that ravaged the circum-Atlantic world between 1765 and 1804. We will consider interconnected events leading up to each conflict and the consequences of war on racial, ethnic, gendered, and indigenous groups. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF,JLIT, JSPE **ISP:** AFR, AMS, GSWS

*Given their subject matter EGL 190, EGL 213 or Jr/Sr. *Seminar: The Faerie Queene* may be taken to fulfill the pre-1700 requirement but, like with GenEd, one course may only fulfill one requirement.

One course focused predominantly on literature by authors who are Black, Indigenous, or People of Color (BIPOC) from the following:

EGL 213 - Circum-Atlantic Revolutions

Course Units: 1.0 This course will draw on literary and historical writings and artwork that emerged before, during, and after the three revolutions that ravaged the circum-Atlantic world between 1765 and 1804. We will consider interconnected events leading up to each conflict and the consequences of war on racial, ethnic, gendered, and indigenous groups. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF,JLIT, JSPE **ISP:** AFR, AMS, GSWS

EGL 233 - 18-19th Century Early Literature of African Diaspora

Course Units: 1.0 This introductory survey course will trace African American movement towards literary and aesthetic mastery beginning with what Henry Louis Gates calls "oral writing." Readings begin with the first known written poems and progress from slave narratives and autobiography to essays and fiction. Authors include Phillis Wheatley, Harriet Jacobs, Frances Ellen Watkins Harper, Solomon Northup, Charles Chesnutt, W.E.B. Du Bois, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AFR, AMS, GSWS

EGL 237 - Reclamation & Renaissance: Black Literary Arts 1900 to 1960, "Dark Like Me - That is my Dream!"

Course Units: 1.0 In this course we will read literatures of African diaspora from the United States and from the English-speaking African Diaspora more broadly speaking, written in the early to mid- 20th century. This course is deliberately using the adjective Black instead of African American to highlight our awareness that the literature of the early 20th century is part of a Pan-African movement. Threads we will follow include: issues of identity (being American; being Black; racial and social passing); miscegenation; claims to culture through literature; political and social change through literature (is it possible?); self-representation and activism through literary arts; rise of pride in being part of African diaspora; gender roles in literary and social contexts. Questions we will raise and explore in the course of the term include: What is the relationship between aesthetic production and political action? What are the gendered aspects of the expressions of the writers and artists? How are "folk" forms incorporated into "literary" forms? How does self-representation operate in the reclamation of a sense of self? We will engage with the complexities of cultural diversities within the African diaspora while we contemplate the traditions we follow. We will begin, as the title of the course suggests, around the turn of the 20th century, when Du Bois writes that the "problem of the twentieth century is the problem of the color line" (Souls of Black Folk 45). We will move through what some called the Harlem Renaissance, during which time writers such as Langston Hughes celebrated being Black in a reclamation of the self: "Dark like me-That is my dream!" (Selected Poems 14). We will explore the literature of the pre- and post- WWII era, ending the term with what was known as the Black Arts Movement. The goal, in terms of content, is to provide you with a broad sampling of literature of the African Diaspora literature of the early 20th century, with a particular focus on literature (prose in the form of essays, short stories, novels; poetry; plays) generated from the United States while also reaching toward its more global pan-Africanist roots. I hope you will follow your interests and curiosities, after the course is over, to explore this literature further. (Also counts for Africana and American Studies). **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JLIT **ISP:** AFR, AMS

EGL 248 - Introduction to Black Poetry

Course Units: 1.0 We will explore the development of African-American poetic voices in North America. We will look at poems and poets as they constitute a hybrid and composite tradition. We will read poetry in anthologies; we will also read several full books by individual authors, and will listen to performance poetry on CD and DVD. A partial list of poets we will read includes Wheatley, Harper, Dunbar, Hughes, McKay, Helene Johnson, Brooks, Baraka, Clifton, Sanchez, Cortez, Morris, Mullen, Brathwaite, Komunyakaa, Francis, Dungy, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AFR, AMS

EGL 252 - The Islamic World and Global Literary Culture

Course Units: 1

The Islamic World and Global Literary culture course asks how two designations of the global - world literature and the Islamic world - think through the concepts of globalization and community. Using insights drawn from recent literary, sociological, and theological research we will consider the important and dynamic role of religion, specifically Islam, in contributing to cultural identity on a global scale.

Students will engage with literary and theoretical texts that have been produced within, by, and about these communities to explore how authors reckoned with the world community envisioned by Islam and how Islamic authors, both practicing and non-religious, have been received into the global literary sphere. In addition to reading canonical novels, topics covered will include critical and cultural theories related to world literary study such as orientalism, the role of translation, literary prize culture, non-Western feminisms, and minority studies. Students will read a challenging and engaging range of texts, including novels, essays, short stories and travelogues produced by artists engaging with diverse geographic and cultural backgrounds drawn from the Arab World, Turkey, the Indian subcontinent, as well as from diaspora communities in Europe and America. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, LCC, WAC, GLIT, GCHF, GSPE **ISP:** AIS

EGL 253 - Narratives of Haunting in US Ethnic Literature

Course Units: 1.0 This course examines the theme of haunting in contemporary US ethnic literature. With this theme in mind, we will investigate the following questions throughout the trimester: Why is haunting such a prevalent theme in ethnic writing? What do we mean when we say that a text is haunted? What are the causes of haunting? What is possession? What are some ways to dispossess or exorcise ghosts? What are the functions of ghosts? Is there such a thing as a good haunting? What are their messages to us? How do we listen to ghosts? Authors include Lan Cao, Nora Okja Keller, Maxine Hong Kingston, Cynthia Ozick, Toni Morrison, Sandra Cisneros, and Leslie Marmon Silko. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, JCHF, JLIT **ISP:** AMS, GSW

EGL 254 - Discourses on the Viet Nam/American War

Course Units: 1.0 This class will examine various perspectives on "The Vietnam War," or, as the people of Viet Nam call it, "The American War." In our archeological exploration into the nature of knowledge about this period in Viet Nam/U.S. history, we will not privilege one perspective over another. Rather, we will examine the diverse political, ideological, and moral positions from which various groups, such as the U.S. government, U.S. soldiers, U.S. citizens, the North Vietnamese people, and the South Vietnamese people, perceive this historic conflict. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, GCHF, GLIT **ISP:** AIS, AMS

EGL 255 - Asian American Literature and Film

Course Units: 1.0 If you are interested in the diverse history of Asian immigration in the U.S., take this course. Together as a class, we will examine major historical moments in Asian America: the first wave of Asian immigration in the mid-nineteenth century, the anti-Asian laws of the late nineteenth century, the Japanese internment during the Second World War, the emergence of Asian American studies during the 1960s Civil Rights Movement, Southeast Asian refugees after the Viet Nam/American War, and the contemporary turns to the transnational and the pan ethnic. To cover these historical moments, we will read the following texts: Island: Poetry and History of Chinese Immigrants on Angel Island, Eat a Bowl of Tea, Farwell to Manzanar, When Broken Glass Floats, American Born Chinese, and American Son. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AIS, AMS, FLM

EGL 256 - Southeast Asian-American Experience

Course Units: 1.0 This course examines the diverse literatures, histories, and cultures of the Vietnamese, Cambodian, Hmong and Laotian through the lens of war, migration, and return. Specific attention will be paid to how the War in Vietnam spread to neighboring countries such as Cambodia and Laos, resulting in mass migration of people from Southeast Asia to the West, specifically the United States. We will examine the literatures, oral testimonies, films, and music created by Southeast Asians in America. Possible authors include: Andrew Lam, Bich Minh Nguyen, Le Thi Diem Thuy, Loung Ung, Chanrithy Him, Kao Kalia Yang, Mai Neng Moua, and Burlee Vang. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AIS, AMS

EGL 262 - Global Modernisms

Course Units: 1.0

While traditionally modernism has been considered a largely European and North American affair, in recent years scholars have sought to contest and expand this canon. New research has shown that modernism existed all over the world, from Africa and Latin America, to the South Pacific and East Asia, and on all continents in between. This course introduces students to a new globally expanded understanding of modernism, while asking them to actively contribute to the ongoing expansion of the canon. We will work with new scholarship and archival materials, in order to better understand what happens to modernism as it spreads around the world.

Writers may include African writers such as Léopold Sédar Senghor, and Wole Soyinka; Caribbean writers Claude McKay and Aimé Césaire; Japanese poets, Hirato Renkichi and Chika Sagawa; Chinese writers such as Lu Xun and Eileen Zhang; Indian writers from Tagore and the Indian Progressive Writers Association to the 1960s avant-gardes; and Turkish modernists including Ahmet Hamdi Tanpınar and the Garip poets.

Students will have the opportunity to work with texts in any languages they may read, or to work exclusively in English (including in translation). By exploring literary criticism on modernism in its historical and global contexts, students will gain an understanding of major debates which have shaped modernist studies across the twentieth century including New Criticism, feminist studies, postcolonial studies, as well as more recent debates on the global turn including weak theory and "bad" modernisms. Students will also improve their writing and independent research skills through an anthology project that invites them to contribute to the ongoing canonization of global modernist texts through producing scholarly annotations, introductions, and digital editing. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, LCC, WAC, GLIT, GCHF, GSPE **ISP:** AIS

EGL 266 - Black Women Writers

Course Units: 1.0 This course provides an introduction to the major themes and concerns of twentieth- and twenty-first century African American women writers. We begin in the 18th century and move quickly to the 20th and 21st. We will examine the ways in which black womanhood is characterized through intersecting categories of race, gender, class, sexuality, and empire. We will explore how selected authors wrestle with stereotypical images of African American women, examine the connections between black womanhood, community, and empire, and discuss the benefits and limitations of the concept of "black women's writing." Possible writers include Frances Harper, Maria Stewart, Anne Spencer, Zora Neale Hurston, Gwendolyn Brooks, Toni Morrison, Audre Lorde, Gloria Naylor, Octavia Butler, and others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM **ISP:** AFR, AMS, GSW

EGL 268 - Staging Black Feminisms

Course Units: 1.0 This course considers the feminist and anti-racist practices of Black female dramatists, placing their plays within their cultural contexts. We will examine the ways in which these works construct Black feminist histories, genealogies, and cultures while challenging racial and sexual hierarchies in both American society and artistic canons. Each week, students will read a landmark dramatic text by a Black female playwright as well as seminal sociological texts and scholarly studies that contextualize the work within broader artistic and social movements. Through discussions, field trips including attendance at theatrical performances and other cultural events, reading responses, and a final presentation based on individual research, students will hone their thinking about the development of Black female voices in American dramatic literature and society. **Cross-Listed:** SOC 209 and ATH 248 **Prerequisite(s):** One 100-level English ourse or a score of 5 on the AP English Language or Literature and Composition test. **CC:** SOCS, HUL, HUM, JCAD, JCHF, JLIT, JSPE **ISP:** AFR, GSW

EGL 269 - New Women around the World

Course Units: 1.0 The idea of the New Woman emerged around the world in the first half of the twentieth century. From Beijing to Berlin, Tokyo to Istanbul, women became visible as chorus girls, urban migrants, starlets, citizens, freedom fighters, consumers, and leisure seekers in new public spaces. This class will examine how literature represented and responded to the global phenomenon of the New Woman, tracing how various national, racial, and colonial contexts gave rise to distinct iterations of the New Woman and examining the linkages among the many geographical and political regions in which she appeared. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** JLIT, JCHF, WAC **ISP:** AFR, AIS, AMS, GSWS

Three more intermediate courses of choice between 200-299 (all 200-levels are the same difficulty):

EGL 200 - Shakespeare to 1600

Course Units: 1.0

Shakespeare's works speak to perennial human concerns (ambition, unrequited love, the conflicts between generations), and he has even been lauded as the "inventor of the human." At the same time, his plays come from a very specific cultural milieu; he was a white man who lived in England from 1564-1616. In this course, we will explore the plays written in the first half of Shakespeare's career, collaborating to appreciate the rhetorical devices of Shakespeare's language and to understand the cultural milieu in which his plays were written. Some of the questions that we will ask include: How do structures of political and familial authority affect the characters' conceptions of their roles and duties? What possibilities do the plays offer for female empowerment? To what extent did Shakespeare's stage, which reached audiences of all classes, challenge contemporary conceptions of inherited nobility at a time of increasing social mobility?
Shakespeare's plays have at their center the question of performance; this makes them very well suited to exploring the multifaceted ways in which human identity is social constructed and socially expressed. In our readings of romantic comedies such as *A Midsummer Night's Dream* and *Much Ado About Nothing*, we will ask how both women and men are constricted by gendered expectations of honor. We will also explore the pernicious association between "fairness" and beauty in Shakespeare's time, discovering how expectations about women's supposed sexual and physical purity worked through references to offensive racial stereotypes about contamination. In our discussion of *The Merchant of Venice*, we will pay particular attention to how the privileging of upper-class, Christian men in the play and the religious othering of Shylock and Jessica contributes to a society in which injustice is hypocritically masked as mercy, and all characters suffer. Our examination of the history plays such as *Henry IV*, Part 1, will attend to the costs of creating an English national identity; in particular, we will explore how racial and gendered othering in these plays defines what it means to be English in way that privilege some and exclude others. **Cross-Listed:** ATH 256 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, WAC, HUM, JLIT

EGL 201 - Shakespeare after 1600

Course Units: 1.0 In this course we will explore plays written in the second half of Shakespeare's career. We will emphasize Shakespeare's great tragedies-works that retain their ability to astound readers and audiences today-but we'll also explore his later comedies, "problem plays," and tragicomic final works. We will collaborate to appreciate the sounds and meaning of Shakespeare's language, to think about the ways he structures plots and creates vivid characters, to understand the cultural milieu in which his plays were written, to make thematic connections across the plays, and to appreciate the plays as both literature and in performance. Shakespearean drama can be challenging to study, but the rewards are lifelong: revelry in language, a strong grounding in theatrical traditions that remain dominant in our culture, a deeper understanding of the actions and values that motivate human beings in society, and an engagement with dramatic works that continue to be reimagined worldwide. **Cross-Listed:** ATH 257 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, JCHF, JLIT, WAC

EGL 202 - Amazons, Saints and Scholars: Women's Writing in the Middle Ages and Renaissance

Course Units: 1.0 This course explores the medieval and early modern female writers of England and France. We will ask: how did women respond in writing to the male-defined literary traditions and conventions of these eras? The course also provides an introduction to some of the major questions and works of feminist literary criticism, including: Why should we read the works of women? What aesthetic standards should we apply when discussing their works? Is

there a difference between "masculine" and "feminine" writing? We will focus on six female writers: Marie de France, Christine de Pizan, Elizabeth Carey, Isabella Whitney, Amelia Lanyer, and Mary Sidney. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 203 - The Age of Heroes

Course Units: 1.0 In 410 the Romans abandoned Britain, withdrawing to the continent just as pagan Germanic raiders began to challenge the island's native Picts and Celts. In 1066 the Duke of Normandy crossed the Channel and kicked a Danish king off the throne of a fully Christianized England. In between these two events lies the matter of this course: the subtle and sophisticated literature, art, and culture of early medieval England. We will explore its evolution and wrestle with thorny questions about the significance and meaning it has been accorded over the centuries. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 204 - Plague, Revolt, Religion, and Nation: The Fourteenth Century

Course Units: 1.0 This course explores English literature as it reflects, shapes, and critiques society from the onset of the Hundred Years' War to the overthrow of Richard II (1337- 1400), a turbulent period that includes the Peasants' Revolt, the Black Plague, the rise of English as the language of literature and government, and the proto-Protestant movement known as Lollardy. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 205 - The Road to Canterbury

Course Units: 1.0 This class will focus on Geoffrey Chaucer's seminal work, *The Canterbury Tales*, as a way to introduce the language, culture, and literature of fourteenth-century England. We'll read selections of the Tales, learning the rudiments of written and spoken Middle English along the way. In addition, students will explore the following topics in relation to Chaucer's work: narrative and story-telling, literary authority, social and class status, gender, racial, religious, and sexual difference, cultural memory, and more. 100-level courses are open to all students. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 206 - Gender in Renaissance Literature

Course Units: 1.0 This course explores English Renaissance texts from a variety of genres with an eye to the gender norms that they both created and critiqued. On the one hand, the early modern period offered very distinct roles for men and women. Men were expected to abide by a code of honor that emphasized bravery and action, while women were expected to be chaste, silent, and obedient. On the other hand, there were countless examples of these norms being challenged. Reading plays, poems, speeches, and conduct manuals, we will consider the complexity of their presentations of gender. **Prerequisite(s):** Any 100 level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT **ISP:** GSWS

EGL 207 - White Columns, White Narratives: Archi[text]ure and Race in the Middle Ages

Course Units: This course will examine the relationship between race, architecture, and literary production in the late medieval period (1000-1500). Students will be introduced to premodern critical race studies (PCRS) through the work of scholars who necessarily examine processes of racialization, architectural practice, and literary production in the medieval period. As a class, we'll use PCRS methods to interrogate medieval archi[text]ural narratives for the ways in

which they participate in race-craft. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT, JCHF

EGL 208 - Renaissance Drama

Course Units: 1.0 Shakespeare and Marlowe were the Beatles-Stones, Red Sox-Yankees, everybody else-Kanye of their day: moral opposites and aesthetic rivals, but also mutual inspirations and at times even collaborators. Marlowe was the dynamic bad boy, drawn to dark characters mirroring his own troubled soul; Shakespeare, the reclusive genius, who worked in more subtle ways to delineate human behavior and challenge existing power structures. We'll see how they together created one of the world's most dynamic literary forms, modern English drama, and how that drama, along with the drama of their rivalry, continues to inform our own ideas about art and its cultural power. **Cross-Listed:** ATH **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 210 - British Literature: Seventeenth-Century Literature

Course Units: 1.0 This course will look at seventeenth-century literature and culture through the idea of revenge, which became a dominant form in an age of turmoil, injury, and change. We will begin with the early revenge plays of Shakespeare, Tourneur, Marston, Ford, and Webster, proceed through the cosmic revenge of Satan in *Paradise Lost*, and end with the ironic revenge exacted on moral goodness by the Restoration poets, playwrights, and philosophers. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 211 - Milton

Course Units: 1.0 The two sides of Milton - the high humanist poet, author of the greatest epic in English and one of the greatest religious poems in any language, and the Puritan revolutionary, defender of regicide and champion of the English commonwealth. The goal of the course will be to see if the two sides can be held separate, or if they must be seen as complementary. We will read Paradise Lost at the rate of one book per week, always trying to relate the two sides of the poet. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** REL

EGL 212 - The Restoration

Course Units: 1.0 This course will closely examine the culture that produced both the first official poet laureate of England, John Dryden, and the most notoriously libertine poet in English, the Earl of Rochester. Also appearing will be the first English woman to make a living from literature, Aphra Behn; the wittiest playwrights in English dramatic history (Wycherley, Etherege, Congreve); John Milton; some very early English novels; and some pretty good philosophers, including Thomas Hobbes, John Locke, and maybe even Sir Isaac Newton. All that and the Great Fire of London, outbreaks of the plague, several wars, and major revolutions in politics and science. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 213 - Circum-Atlantic Revolutions

Course Units: 1.0 This course will draw on literary and historical writings and artwork that emerged before, during, and after the three revolutions that ravaged the circum-Atlantic world between 1765 and 1804. We will consider interconnected events leading up to each conflict and the consequences of war on racial, ethnic, gendered, and indigenous groups. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF,JLIT, JSPE **ISP:** AFR, AMS, GSWS

EGL 217 - Enlightenment and Romanticism

Course Units: 1.0 Consideration of the relationships between two major currents in modern European thought and culture: Enlightenment and Romanticism. Authors will range from Descartes to Nietzsche and may include Voltaire, Rousseau, Goethe, and Kant. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 220 - The Romantic Revolution

Course Units: 1.0 The Romantic period was one of Britain's most "revolutionary" eras in a number of important ways. For England, the age was marked by dramatic social, political, literary, and scientific upheaval and change. In this course we will investigate the various causes that were envisioned, promoted, and enacted during this era and trace their often wide-ranging and revolutionary effects. Readings will likely include selections from the following authors: William Wordsworth, Samuel Taylor Coleridge, William Blake, Mary Shelley, Lord Byron, Percy Bysshe Shelley, and John Keats. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, JCHF, JLIT, WAC

EGL 222 - Gendered Ecologies in the Long-Nineteenth Century

Course Units: This course will challenge gendered judgments and standardized principles represented in the masculinized canon of nineteenth-century nature writing and establishes a framework for women writers of the long nineteenth century, who were active contributors to the discourse of natural history. These women writers engaged in critical observations of eco-materiality, analyzed their findings, and encrypted their discoveries of nature in their literary creations. Our course readings will focus on the works of several prominent, trans-Atlantic literary women from the long-nineteenth century whose multi-directional observations of animate and inanimate objects in the environmental sphere are founded on personal discoveries made while interacting with their surroundings. The aim of this course is to reconsider the place of women as naturalist writers and to foreground the salient contributions of literary women writers to the study of eco-feminism, botany, political ecology, and bio-communal systems. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, ENS, GSWS

EGL 223 - Jane Austen

Course Units: 1.0 Jane Austen has achieved what few other literary authors can boast: membership in "the canon" of "great authors" and an intensely devoted, energetic modern fan base complete with cosplay, fan fiction, pilgrimages, and a never-ending series of visual adaptations. Students will read Jane Austen's work in chronological order, explore some late 18th and early 19th century contexts (biographical, philosophical, literary, cultural, historical), become familiar with some of the central, current, and ongoing scholarly debates about Austen, and discuss the value of, and consider the insights revealed by, some modern adaptations of Austen's work. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 224 - 19th-Century Novel

Course Units: 1.0 This course on the 19th-century novel is an experiment in slow reading. According to David Mikics, "Reading better means reading more slowly. There is a quiet movement afoot on behalf of slowness: slow cooking, slow thinking, and yes, slow reading. In reaction against the breathless pace of our computer-driven world, writers on social trends have begun to extol the virtues of a more meditative, involved approach to many parts of our lives, and reading is no exception" (1). Together, we will spend the term slowly reading and rereading one substantial Victorian novel, focusing on slow reading as both experience and methodology. In addition to the novel, we will read around it: digging into primary and secondary source material to build a complete portrait of the novel itself, the cultural

landscape that surrounded it, and its critical and artistic legacy. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 230 - Seduction in Early American Republic

Course Units: 1.0 In her seminal study, *Revolution and the Word*: *The Rise of the Novel in America*, Cathy N. Davidson argues that "literature is not simply words upon a page but a complex social, political, and material process of cultural production" (viii). The eighteenth-century sentimental novel serves to highlight a moment in history lodged among judgments, anxieties and controversies about the direction the newly-formed American Republic would take at the end of the Revolution. Embedded within these narratives are questions about both men's and women's power and authority in the public and private spheres, the negation of the female self, the seductive function of romance and courtship, and the perception of women's bodies as moral, social, and biologic commodities. This course seeks to explore disjunctions between the sentimental structure of the early American novel and its contradictory attitudes toward liberty and self-expression. Through the lens of queer theory, affect theory, and new materialism, students will examine how seduction, homoerotica, and cross-dressing both reinforce and subvert American values and ideals that are distinct from European standards of morality. The readings will also consider how the cult of "true womanhood," prominent during the first few decades of the nineteenth century, suppressed pleas for women's equality. How do the texts under consideration help to define the new nation, its citizens, and boundaries? In what ways do these texts consolidate nationhood through the formation of a national literature and the narrative structure of a national history, culture, and consciousness? Do these novels construct, conserve, or undermine American cultural institutions? **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, GSWS

EGL 231 - Nineteenth-Century American Literature

Course Units: 1.0 This course focuses on the self-conscious development of literary tradition in 19th century America -- its meaning, its implications, its failures -- and its aesthetic and moral possibilities. Writers under consideration may include Emerson, Fuller, Thoreau, Douglass, Hawthorne, Melville, Dickinson, and Twain, and topics will include individualism, transcendentalism, abolition, the coming of war, the aftermath of war, growth, expansion, and power. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 233 - 18-19th Century Early Literature of African Diaspora

Course Units: 1.0 This introductory survey course will trace African American movement towards literary and aesthetic mastery beginning with what Henry Louis Gates calls "oral writing." Readings begin with the first known written poems and progress from slave narratives and autobiography to essays and fiction. Authors include Phillis Wheatley, Harriet Jacobs, Frances Ellen Watkins Harper, Solomon Northup, Charles Chesnutt, W.E.B. Du Bois, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AFR, AMS, GSWS

EGL 236 - Trans-Atlantic Realism and Naturalism

Course Units: 1.0 Realism and naturalism were aesthetic movements that emerged in American fiction between approximately 1865 and 1925. This course examines these two literary movements to show how writers of this era explored the trauma created by war (the Civil War and WWI), the moral consequences of freedom and sexual awareness, rapid urbanization and the Great Northern migration, inconsistencies between wealth and poverty, and innovative discoveries in science and technology. The purpose of this course, then, is to investigate how the authors of this period practiced their art both collectively and individually and the ways in which American social life informed the ideologies of realism and naturalism. Possible writers we will study include William Dean Howells, Stephen Crane, Frank Norris, Theodore Dreiser, Kate Chopin, Mary Wilkins Freeman, Mark Twain, Edith Wharton, Henry James, and

Paul Laurence Dunbar. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, GSW

EGL 237 - Reclamation & Renaissance: Black Literary Arts 1900 to 1960, "Dark Like Me - That is my Dream!"

Course Units: 1.0 In this course we will read literatures of African diaspora from the United States and from the English-speaking African Diaspora more broadly speaking, written in the early to mid- 20th century. This course is deliberately using the adjective Black instead of African American to highlight our awareness that the literature of the early 20th century is part of a Pan-African movement. Threads we will follow include: issues of identity (being American; being Black; racial and social passing); miscegenation; claims to culture through literature; political and social change through literature (is it possible?); self-representation and activism through literary arts; rise of pride in being part of African diaspora; gender roles in literary and social contexts. Questions we will raise and explore in the course of the term include: What is the relationship between aesthetic production and political action? What are the gendered aspects of the expressions of the writers and artists? How are "folk" forms incorporated into "literary" forms? How does self-representation operate in the reclamation of a sense of self? We will engage with the complexities of cultural diversities within the African diaspora while we contemplate the traditions we follow. We will begin, as the title of the course suggests, around the turn of the 20th century, when Du Bois writes that the "problem of the twentieth century is the problem of the color line" (Souls of Black Folk 45). We will move through what some called the Harlem Renaissance, during which time writers such as Langston Hughes celebrated being Black in a reclamation of the self: "Dark like me-That is my dream!" (Selected Poems 14). We will explore the literature of the pre- and post- WWII era, ending the term with what was known as the Black Arts Movement. The goal, in terms of content, is to provide you with a broad sampling of literature of the African Diaspora literature of the early 20th century, with a particular focus on literature (prose in the form of essays, short stories, novels; poetry; plays) generated from the United States while also reaching toward its more global pan-Africanist roots. I hope you will follow your interests and curiosities, after the course is over, to explore this literature further. (Also counts for Africana and American Studies). **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JLIT **ISP:** AFR, AMS

EGL 242 - Experimental Writing Workshop

Course Units: 1 Experimental writing explores language as a medium in unexpected and often surprising ways. This course will focus primarily on poetry, though poetry defined somewhat broadly, including mixed media, visual, and prose poetry. We'll read a variety of experimental texts, using them as launch points for our own experimental writing practices. This generative workshop will focus on the creation of new work using experimental techniques, while learning to engage deeply in reflective reading practices with each other's work. We'll experiment with constraint, computational poetry, hybrid and mixed media poetry, and generally be open to as many processes and approaches as we can. The goals of our workshop time, and our readings, will be to encourage you to develop new modes, skills, and techniques for writing creatively. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD

EGL 243 - The Poetic Object Workshop: Experimental Book Forms

Course Units: This course will explore the intersection between poetry and visual arts as a space for literary artistic production. Through demonstration and assignments students will write poetry and create prints and objects that integrate visual and textual elements. Students will practice combiningstructure, visual, and textual content in meaningful ways. **Cross-Listed:** AVA 353 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test or AVA 150 , or AVA 251 or AVA 252 or instructor's permission

EGL 244 - The Contemporary British Imagination

Course Units: 1.0 This course will examine contemporary British literary works. We will be reading closely, carefully, and critically about gender, sexuality, class, race, love, trauma, narrative, style, history, and more. This course will familiarize students with a sampling of the (often experimental) literature that the global Anglophone world has produced fairly recently; our selections will range from experimental short stories to books-turned-films to so-called "weird fiction," in order to address the following major questions: how does the contemporary British literary imagination develop? And, what, exactly, does it develop into? **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 245 - Experimental Texts

Course Units: 1.0 Experiments in writing have a long history and are often some combination of fascinating, weird, complex, risky, and wild. This course will cross genre-boundaries in order to discover what it means to read, write, and experience "experimental" literature, which usually attempts to challenge the traditions, formal devices, and audience expectations of literary engagement. With a focus on the relationship between form and content as well as attention paid to the limitations associated with strict categorical delineations of literary and cultural objects, we will spend the term analyzing and producing experimental texts. We will spend time considering primarily contemporary textual responses to cultural, social, and political shifts and the ways in which such shifts inform and affect our reading practices. Readings will include poetry fiction, theory, and contemporary media. Writing assignments will include interpretive and creative works. Collaborative projects will also be a part of this course. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 247 - Studies in Modern Poets: Bob Dylan and Gary Snyder

Course Units: 1.0 This course is a study in the role of history in the ways that two poets, Bob Dylan and Gary Snyder, conceive of their work. Dylan's fascination with the music and history of America from the run-up to the Civil War through Reconstruction and the Great Depression, shapes his sense of useful subject matter, his development of the personae that inhabit his lyrics, and his range of rhetoric, from the nostalgic to the prophetic; it also places him squarely within contemporary controversies about the political uses of history. Gary Snyder's understanding that history extends to the natural world and our relationship to it is integral to his complex enterprise as a writer of poems and essays, as an activist and educator, and as a point of connection in a web of similarly concerned thinkers. His conception of history as a matter of bioregions rather than of nations and of tradition as a matter of wisdom rather than of identity unsettles the usual divisions between art, politics and science as well as our conventional expectations of poetry. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD, JLIT **ISP:** AMS, REE

EGL 248 - Introduction to Black Poetry

Course Units: 1.0 We will explore the development of African-American poetic voices in North America. We will look at poems and poets as they constitute a hybrid and composite tradition. We will read poetry in anthologies; we will also read several full books by individual authors, and will listen to performance poetry on CD and DVD. A partial list of poets we will read includes Wheatley, Harper, Dunbar, Hughes, McKay, Helene Johnson, Brooks, Baraka, Clifton, Sanchez, Cortez, Morris, Mullen, Brathwaite, Komunyakaa, Francis, Dungy, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AFR, AMS

EGL 249 - Contemporary Poetry

Course Units: 1.0 In this course, we will take a close look at the work of five poets, three whose lives have spanned the American experience from the 1960s to the present (Peg Boyers, Carl Phillips, Frank Bidart) and two younger poets (Chelsea Woodard and Diane Mehta, both Union graduates). We'll take a look at the problem of the speaker in the poems (who may be the poet, more or less, or a mask, or a fiction, or some combination), which is also a way of asking questions about identity, history, and culture, as well as about freedom and restraint, the possibilities and limitations of

language. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 250 - The Beats and Contemporary Culture

Course Units: 1.0 An examination of the writers of the Beat Generation (including Allen Ginsberg, Jack Kerouac, Gary Snyder, Edward Sanders) and of their lasting influence on American popular culture. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, GLIT, GCAD **ISP:** AMS, GSWS, REE

EGL 251 - World Literatures in English

Course Units: 1.0 Besides the USA, Canada, the UK and Ireland, there are dozens of countries where English is commonly spoken and written. From Australia to Zimbabwe, Belize to Nigeria, Jamaica to India, New Zealand to Kenya, literature in English is a world-wide phenomenon. In this course, students will read and analyze English-language poems, short stories, personal essays, and novels from a selection of far-flung countries, to learn about the peoples' cultures, histories, struggles, and achievements. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JLIT, JSPE **ISP:** AFR, REE

EGL 252 - The Islamic World and Global Literary Culture

Course Units: 1

The Islamic World and Global Literary culture course asks how two designations of the global - world literature and the Islamic world - think through the concepts of globalization and community. Using insights drawn from recent literary, sociological, and theological research we will consider the important and dynamic role of religion, specifically Islam, in contributing to cultural identity on a global scale.

Students will engage with literary and theoretical texts that have been produced within, by, and about these communities to explore how authors reckoned with the world community envisioned by Islam and how Islamic authors, both practicing and non-religious, have been received into the global literary sphere. In addition to reading canonical novels, topics covered will include critical and cultural theories related to world literary study such as orientalism, the role of translation, literary prize culture, non-Western feminisms, and minority studies. Students will read a challenging and engaging range of texts, including novels, essays, short stories and travelogues produced by artists engaging with diverse geographic and cultural backgrounds drawn from the Arab World, Turkey, the Indian subcontinent, as well as from diaspora communities in Europe and America. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, LCC, WAC, GLIT, GCHF, GSPE **ISP:** AIS

EGL 253 - Narratives of Haunting in US Ethnic Literature

Course Units: 1.0 This course examines the theme of haunting in contemporary US ethnic literature. With this theme in mind, we will investigate the following questions throughout the trimester: Why is haunting such a prevalent theme in ethnic writing? What do we mean when we say that a text is haunted? What are the causes of haunting? What is possession? What are some ways to dispossess or exorcise ghosts? What are the functions of ghosts? Is there such a thing as a good haunting? What are their messages to us? How do we listen to ghosts? Authors include Lan Cao, Nora Okja Keller, Maxine Hong Kingston, Cynthia Ozick, Toni Morrison, Sandra Cisneros, and Leslie Marmon Silko. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, JCHF, JLIT **ISP:** AMS, GSW

EGL 254 - Discourses on the Viet Nam/American War

Course Units: 1.0 This class will examine various perspectives on "The Vietnam War," or, as the people of Viet Nam call it, "The American War." In our archeological exploration into the nature of knowledge about this period in Viet Nam/U.S. history, we will not privilege one perspective over another. Rather, we will examine the diverse political, ideological, and moral positions from which various groups, such as the U.S. government, U.S. soldiers, U.S. citizens, the North Vietnamese people, and the South Vietnamese people, perceive this historic conflict. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, GCHF, GLIT **ISP:** AIS, AMS

EGL 255 - Asian American Literature and Film

Course Units: 1.0 If you are interested in the diverse history of Asian immigration in the U.S., take this course. Together as a class, we will examine major historical moments in Asian America: the first wave of Asian immigration in the mid-nineteenth century, the anti-Asian laws of the late nineteenth century, the Japanese internment during the Second World War, the emergence of Asian American studies during the 1960s Civil Rights Movement, Southeast Asian refugees after the Viet Nam/American War, and the contemporary turns to the transnational and the pan ethnic. To cover these historical moments, we will read the following texts: Island: Poetry and History of Chinese Immigrants on Angel Island, Eat a Bowl of Tea, Farwell to Manzanar, When Broken Glass Floats, American Born Chinese, and American Son. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AIS, AMS, FLM

EGL 256 - Southeast Asian-American Experience

Course Units: 1.0 This course examines the diverse literatures, histories, and cultures of the Vietnamese, Cambodian, Hmong and Laotian through the lens of war, migration, and return. Specific attention will be paid to how the War in Vietnam spread to neighboring countries such as Cambodia and Laos, resulting in mass migration of people from Southeast Asia to the West, specifically the United States. We will examine the literatures, oral testimonies, films, and music created by Southeast Asians in America. Possible authors include: Andrew Lam, Bich Minh Nguyen, Le Thi Diem Thuy, Loung Ung, Chanrithy Him, Kao Kalia Yang, Mai Neng Moua, and Burlee Vang. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AIS, AMS

EGL 257 - Irish American Literature: Race, Gender, Sexuality

Course Units: 1.0 **(Fall: Bracken)** This course will provide an introduction to Irish American literature from the 19th century to the present day, looking at a number of issues. Specific attention will be paid to constructions of race, gender, and sexuality and the texts examine here will be explored with questions relation to these in mind. Throughout the course, we will consider race relations in 19th and 20th century US culture, new scholarship on the Black and Green Atlantic and trace the problematics of Irish America's (self) construction of whiteness. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUM, HUL, WAC **ISP:** GSW

EGL 258 - Changing Ireland

Course Units: 1.0 This course will be looking at the changing nature of Irish society since the economic boom of Celtic Tiger Ireland in the 1990's. EU membership, US investment and the effects of global internationalism have brought about radical culture transformations in the country which in turn are altering conventional meanings of Irishness and Irish identity. We will be looking at representations of this changing Ireland in literature and film, paying attention to issues such as new technologies, post-feminism, sexualities, race and ethnicity. Texts will include Martin McDonagh's *In Bruges*, Anne Enright's novel *The Wig My Father Wore*, and the poetry of Leanne O'Sullivan. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM **ISP:** FLM, GSWS

EGL 259 - Irish Literature and Film

Course Units: 1.0 The aim of this course is to introduce you to the field of Irish Studies, examining how issues relating to language, identity and nationhood are intimately connected in Irish literature and film. In this course we will be studying Irish literary texts from the beginning of the 19th century to the late 20th century, examined alongside a selection of contemporary films. This course will ask you to consider the ways in which cultural concerns of the Irish past continue to haunt the landscape of the present day, paying attention to issues of gender, class, race and sexuality. Texts will include Lady Morgan's *Wild Irish Girl*, Bram Stoker's *Dracula*, Samuel Beckett's *Waiting for Godot* and Neil Jordan's film *Michael Collins*. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, LCC, HUM **ISP:** FLM, GSWS

EGL 260 - James Joyce

Course Units: 1.0 This course will focus entirely on Irish writer James Joyce's modernist masterpiece *Ulysses*, published in 1922. This is a complex, challenging and experimental novel (900 pages), which uses stream of consciousness as its primary literary mode. Set on just one day, June 16th 1904, it tells the story of Leopold Bloom, Stephen Dedalus, and Molly Bloom as we learn of their pasts, presents and hopes for the future. Joyce's novel is a meditation on the lives of these characters, and the modern colonial Dublin they inhabit, however it is also a self-reflective piece of literature which foregrounds issues relating to language, style, and storytelling. In the course, we will successively read all of the chapters of *Ulysses*, analyzing it through a variety of critical paradigms, including post-colonialism, modernism, and feminism. We will also watch a number of films relating to Joyce and his work, such as Nora, Bloom, and Ulysses, and at the end of the course we will consider the commodification of Joyce as the 'Great Irish Writer' through the yearly Bloomsday celebrations of June 16th in Dublin. Students are encouraged to read Joyce's *Dubliners* and *A Portrait of the Artist as a Young Man* before the class begins. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM

EGL 261 - Modernism and Modernity

Course Units: 1.0 This course examines British fiction from the early twentieth-century, a period often referred to as the "modernist" era. The moderns experimented with new, different, and exciting ways of writing that perplexed many readers, yet such changes have come to be seen as important innovations in literary style. In addition to engaging with questions of form and style, the moderns were also interested in subjects that were previously viewed as taboo, questionable, and, as such, often unspeakable. These topics included trauma, the lasting effects of war, sexual experimentation, adultery, insanity, and newly carved out gender and familial roles. Throughout our term together, we will critically consider, discuss, and write about the dynamic between the content of modernist writing and its innovative style and form. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** GSWS

EGL 262 - Global Modernisms

Course Units: 1.0

While traditionally modernism has been considered a largely European and North American affair, in recent years scholars have sought to contest and expand this canon. New research has shown that modernism existed all over the world, from Africa and Latin America, to the South Pacific and East Asia, and on all continents in between. This course introduces students to a new globally expanded understanding of modernism, while asking them to actively contribute to the ongoing expansion of the canon. We will work with new scholarship and archival materials, in order to better understand what happens to modernism as it spreads around the world.
Writers may include African writers such as Léopold Sédar Senghor, and Wole Soyinka; Caribbean writers Claude McKay and Aimé Césaire; Japanese poets, Hirato Renkichi and Chika Sagawa; Chinese writers such as Lu Xun and Eileen Zhang; Indian writers from Tagore and the Indian Progressive Writers Association to the 1960s avant-gardes; and Turkish modernists including Ahmet Hamdi Tanpınar and the Garip poets.

Students will have the opportunity to work with texts in any languages they may read, or to work exclusively in English (including in translation). By exploring literary criticism on modernism in its historical and global contexts, students will gain an understanding of major debates which have shaped modernist studies across the twentieth century including New Criticism, feminist studies, postcolonial studies, as well as more recent debates on the global turn including weak theory and "bad" modernisms. Students will also improve their writing and independent research skills through an anthology project that invites them to contribute to the ongoing canonization of global modernist texts through producing scholarly annotations, introductions, and digital editing. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, LCC, WAC, GLIT, GCHF, GSPE **ISP:** AIS

EGL 263 - Literature and Sexuality

Course Units: 1.0 By examining literary and cultural representations, this course both interrogates the politics and social dynamics of various sexual identities and subjectivities and examines complex representations of both gender and sexuality. This course also focuses on the literary study of important straight, gay, lesbian, queer, bisexual, and transgender writers within their evolving social, historical, and cultural contexts over the last few centuries. We will discuss some of the major critical debates both in literary studies and in gender and sexuality studies, asking and attempting to answer the following questions: How is sexuality represented in literature? How has the relationship between literature and sexuality evolved over time? Who creates the discourses on sexualized bodies and identities? How can we understand the relationship between lived experience and literary/cultural representations? What might be queer about literature? What makes a narrative queer? **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** GSW

EGL 266 - Black Women Writers

Course Units: 1.0 This course provides an introduction to the major themes and concerns of twentieth- and twenty-first century African American women writers. We begin in the 18th century and move quickly to the 20th and 21st. We will examine the ways in which black womanhood is characterized through intersecting categories of race, gender, class, sexuality, and empire. We will explore how selected authors wrestle with stereotypical images of African American women, examine the connections between black womanhood, community, and empire, and discuss the benefits and limitations of the concept of "black women's writing." Possible writers include Frances Harper, Maria Stewart, Anne Spencer, Zora Neale Hurston, Gwendolyn Brooks, Toni Morrison, Audre Lorde, Gloria Naylor, Octavia Butler, and others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM **ISP:** AFR, AMS, GSW

EGL 267 - The Virginia Woolf

Course Units: 1 Virginia Woolf is, quite frankly, one of the most significant writers transnationally and transhistorically. Aside from her acclaimed, now often canonical novels, Woolf wrote short stories and essays; indeed, her letters and diaries, in addition, have become a core part of modernist literary history. This class examines Woolf and much, though notably not all, of her work within their social, cultural, and historical contexts. By tracing the evolution of Woolf's work, we will interrogate her stylistic innovations, shifting political ideologies, remarkable social circles, and complex life. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUM, HUL, WAC **ISP:** GSW

EGL 268 - Staging Black Feminisms

Course Units: 1.0 This course considers the feminist and anti-racist practices of Black female dramatists, placing their plays within their cultural contexts. We will examine the ways in which these works construct Black feminist histories, genealogies, and cultures while challenging racial and sexual hierarchies in both American society and artistic canons. Each week, students will read a landmark dramatic text by a Black female playwright as well as seminal sociological texts and scholarly studies that contextualize the work within broader artistic and social movements. Through

discussions, field trips including attendance at theatrical performances and other cultural events, reading responses, and a final presentation based on individual research, students will hone their thinking about the development of Black female voices in American dramatic literature and society. **Cross-Listed:** SOC 209 and ATH 248 **Prerequisite(s):** One 100-level English ourse or a score of 5 on the AP English Language or Literature and Composition test. **CC:** SOCS, HUL, HUM, JCAD, JCHF, JLIT, JSPE **ISP:** AFR, GSW

EGL 269 - New Women around the World

Course Units: 1.0 The idea of the New Woman emerged around the world in the first half of the twentieth century. From Beijing to Berlin, Tokyo to Istanbul, women became visible as chorus girls, urban migrants, starlets, citizens, freedom fighters, consumers, and leisure seekers in new public spaces. This class will examine how literature represented and responded to the global phenomenon of the New Woman, tracing how various national, racial, and colonial contexts gave rise to distinct iterations of the New Woman and examining the linkages among the many geographical and political regions in which she appeared. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** JLIT, JCHF, WAC **ISP:** AFR, AIS, AMS, GSWS

EGL 270 - Imagining the Nation(s): Ireland/India

Course Units: 1.0 This course will explore the colonial and postcolonial literary histories of India and Ireland, exploring the decolonizing energies of both countries' key writers. A comparative class, we will analyze three important moments in Ireland and India's literary histories, focusing on the colonial, postcolonial, and globalized periods. Beginning with the colonial, the class will study the late 19th and early 20th century era, focusing on the writers Rabindranath Tagore and W.B. Yeats, both Nobel literature prize winners, modernist innovators, and decolonial activists for independence in their respective countries. Following this, we will move into the mid to late 20th century postcolonial periods of India and Ireland, specifically reading the work of Edna O'Brien and Arundhati Roy. Their work (and its reception) exposes many of the colonial legacies in post-independence, as well as its contradictions and gendered and religious repressions. Lastly, the course will consider the work of two contemporary 21st century writers, Sally Rooney and Meena Kandasamy, exploring zones of connection between globalization, colonial histories, gender and sexuality. **Prerequisite(s):** EGL 100 or EGL 101 or EGL 102 or a grade of 5 on the AP English Literature or Language test. **CC:** HUL, HUM, WAC-R **ISP:** GSWS

EGL 271 - Dark Deeds: Crime in the Adirondacks

Course Units: 1.0 Merriam Webster defines a crime as an illegal act for which someone can be punished by the government; especially: a gross violation of law. A crime, however, is also defined in moral and ethical terms, as a grave offense, especially against morality; something reprehensible, foolish, or disgraceful. Students in this course will explore a variety of literary and historical illustrations of each of these types of crimes as they have occurred in the Adirondack Mountains throughout history. As we investigate various illegal acts in the Adirondacks, we will also examine underlying moral crimes, such as poverty and economic depression, which have the potential to lead individuals toward a life of crime. We will explore Chester Gillette's 1906 murder of Grace Brown at Big Moose Lake and the highly sensationalized murder trial that ensued, alongside Theodore Dreiser's 1925 novel that was based on the murder and criminal case. We will analyze the prison system in the Adirondacks, and we'll investigate various mobsters who stayed in Saratoga Springs during the Prohibition Era. We will also explore the crime of contagion as we read works written about tuberculosis and various sanatoriums in Saranac Lake. Part of our class time will be held at the Kelly Adirondack Center (KAC), working in the Adirondack Research Library. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, ENS, LAW

EGL 272 - Indigenous Sovereignty: Indigiqueer and Two-Spirit Voices

Course Units: 1.0 Students will consider literary works from several Native American writers who challenge white privilege and modes of possession. Texts will support place consciousness and tribal revitalization through an intergenerational awareness of intercultural dialogue. The course will focus on Indigenous counter-narratives that endeavor to dislodge the dominance of canonical white writers and, using a queer theoretical lens, will explore ways to reframe binary heteronormative practices.Course readings will focus on the consequences of dualistic thinking, colonization, and Eurocentric ideals. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **ISP:** ENS

EGL 273 - Disability, Literature, and Society

Course Units: 1

Through close reading and analysis of literary and cultural representations of disability, this course provides an introduction to the interdisciplinary field of disability studies. We will take the social model perspective that the experience of a disability is shaped less by physical or intellectual difference than by social attitudes and material barriers to access as a point of departure. All of the texts we will discuss this term represent disability in one way or another, some more centrally than others. On the one hand, we will catalogue the ways that literary texts create and disseminate damaging cultural narratives about disabled individuals. On the other, we will consider how various artistic works can resist dominant cultural representations of disability and challenge deep-seated ideals of physical and cognitive normalcy. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test.
CC: JLIT, WAC

EGL 274 - Uncanny Texts: Literature and Psychoanalysis

Course Units: 1.0 By interrogating literary, cultural, and psychoanalytical texts, this course examines the relationship between literature and psychoanalysis; the two have been in close conversation since the early theoretical developments that began to define psychoanalysis. From Freud's use of Hamlet and The Sandman as key cornerstones of his own theories to the way that J.K. Rowling's Harry Potter and the Sorcerer's Stone illustrates Jacques Lacan's notion of the Mirror Stage, literature and psychoanalysis have been dialogically and dynamically intimate bedfellows. During our term, we will look at psychoanalytical writings by Sigmund Freud, Jacques Lacan, and others in conjunction with transhistorical literary and cultural texts. We will examine specific psychoanalytical concepts like the unconscious, desire, sublimation, shame, the uncanny, the death drive, the primal horde, infantile sexuality, and mourning and melancholia. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** GSWS

EGL 275 - Autobiography

Course Units: 1.0 This course explores the development of the autobiographical genre from the late 18th century to the present day, beginning with Jean-Jacques Rousseau's *Confessions*. Through a combination of close reading, historical contextualization, and critical analysis, we will engage with key texts that have shaped the autobiographical form. Readings will focus on the interplay of memory, truth, and storytelling, as well as the ethical dimensions of self-representation. We will also explore the ways authors shape their life stories to reveal complex identities, cultural contexts, and historical moments. Reading lists vary widely from term to term. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 276 - Literature of the Manor House

Course Units: 1.0 In this course we will investigate the rich and complex history of the genre of English manor house fiction. Focusing on texts ranging from Jane Austen's *Northanger Abbey* and E. M. Forster's *Howards End* to Kazuo Ishiguro's *The Remains of the Day*, Sarah Waters' *The Little Stranger*, and Ian McEwan's *Atonement*, we will explore

issues of gender, sexuality, race, and especially class in both course readings and class discussions. Furthermore, we'll examine a number of filmic representations of British country house life, including Robert Altman's *Gosford Park* and Julian Fellowes' *Downton Abbey*. In addition to crafting course papers, students will have the option to research, create, and showcase their own multi-media projects exploring virtual manor homes via a range of freely downloadable programs and platforms. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD, JLIT **ISP:** GSW, STS

EGL 277 - Philosophical Fiction

Course Units: 1.0 This course will deal with works of fiction in which philosophy or philosophical concepts play a significant role. A key issue is the relationship between ideas and (literary) form. Authors will come from a wide range of traditions and may include Descartes, Rousseau, Wordsworth, Nietzsche, Camus, Dostoevsky, Borges, Calvino, Lem, and Le Guin. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** REE

EGL 279 - Literature and Science

Course Units: 1.0 An interdisciplinary examination of the interactions between literature and science. Topics will vary from year to year and may include science writing, the representation of science and scientists in literature, literature inspired by science, literature and science as competing ways of knowing the world, the figurative dimension of scientific writing, and speculative fiction. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, STS

EGL 280 - Nature and Environmental Writing

Course Units: 1.0 This course will focus on the traditions of nature and environmental writing in the American context, with an emphasis on the social and cultural dynamics of the environment and environmental action. Among other questions, we will ask ourselves: How do class, gender, and race enter into the nexus of social interactions that shape our environment? What is the place of literature in community, literacy, and environmental activism? What are the connections between the ways we speak and write about the environment and our actions toward the environment? How does the wilderness concept affect the ways citizens have access to public spaces? We will consider the concept of "nature" as we move through the course, culminating (if you like) with some nature writing of your own. Readings may include Thoreau; Carson; Leopold; Kingsolver, and selections from *Reading the Roots: American Nature Writing Before Walden*; *Colors of Nature*; Lauret Savoy, T*race: Memory, History, and the American Landscape*; and F. Marina Schauffler, *Turning to Earth: Stories of Ecological Conversion.* **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, ENS, STS

EGL 281 - Environmental Psychology and the American Literary Landscape

Course Units: 1.0 Environmental research psychologist Maria Vittoria Giuliani emphasizes that human-to-place attachments "not only permeate our daily life but very often appear also in the representations, idealizations and expressions of life and affect represented [in] literature." Indeed, many literary works emphasize humanity's basic attachment needs and the importance person-to-place bonds have in the development of the human psyche. American fiction writers frequently employ descriptions of American landscapes as inspiration for character and plot development, and American nature writers often emphasize the way in which wilderness environments may influence one's mental and physical health and emotional well-being. In fact, recent studies in the field of cognitive neuroscience provide empirical evidence to substantiate the theory that exposure to a natural environment may actually generate structural changes in the brain by increasing oxygenation and blood flow that occur in response to neural activity. Hence, this course will employ contemporary studies in place attachment, environmental psychology, and cognitive neuroscience to examine the way in which various literary works illustrate the important role environment plays in aiding or obstructing one's ability to think, reason, remember, problem-solve, process information, use language, or be

creative. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, ENS

EGL 282 - The Theory of Things: Objects, Emotions, Ideas

Course Units: 1.0 Everybody wants things, needs things, likes things, loves things! Things drive economies, incite wars, save lives; things help us communicate, work, play, move, talk, not talk, and so much more. The theory of things derives from humanity's interest in material culture studies and the connections that can be made between people and physical objects. But there is so much more to consider when discussing 'things,' such as those things that are not physical objects-love, hate, desire, thoughts, feelings, moods, pain, concepts, ideas, and words, just to name a few. In this course, students will discuss both material and immaterial 'things' and in particular how 'things' affect people, predominantly marginalized individuals and groups. *Course developed with support from the Byron A. Nichols Fellowship for Faculty Development. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT, JCHF, JSPE **ISP:** GSW

EGL 283 - Pilgrims, Flâneurs, & Pranksters: The Walk in Literature

Course Units: 1.0 From the poems of William Wordsworth to contemporary novels such as Teju Cole's *Open City,* literary narratives often feature journeys taken on foot. Among other things, a walk, in literature, can structure plot, serve as metaphor, or anchor a stream-of-consciousness narrative within a physical setting. A walker, like a reader, is a consumer of sights. But she is also a producer of thoughts, words, and creative pathways through the world. In this course we will investigate the relationships between walking, thinking, reading, and writing, considering the ways we move through spaces (natural, urban, public, solitary) and the forces and questions that shape our experiences in those spaces. Our texts will include standard novels and essays, as well as work by walking artists like Richard Long, audio-video artist Janet Cardiff, and street artists, for whom the world is the page and the walker is the reader. You will write traditional academic papers, but we will also walk, and some assignments will encourage you to create walking texts of your own. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT

EGL 284 - Interactive Fiction Workshop

Course Units: 1 Interactive fiction is storytelling that uses technology to create an interactive "reading" experience, requiring the reader to make choices that influence the plot. In this course you are going to read, critique, and create interactive fiction. You'll develop your storytelling skills, and along the way you'll learn some programming concepts, and history of narrative. video games. We'll also consider how race, gender, class, sexuality, and (dis)ability shape our experiences of these games as players and writers. No previous CS experience is necessary. Students will need access to a laptop for class. **Cross-Listed:** CSC 084 **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of instructors. **CC:** HUL, HUM, SET, WAC, JCAD, JETS, JLIT **ISP:** AMS, GSW, STS

EGL 285 - Nabokov

Course Units: 1 Vladimir Nabokov was a language genius, expatriate, chess master, butterfly biologist, and one of the best literary stylist in English. His famous (and infamous) novel *Lolita* has been scandalous ever since its publication in 1955. His texts have inspired movies, passionate discussions, and a polyglot global following. In this class, we will read several of Nabokov's novels, short stories, and his autobiography. We will watch movies based on his books. If you love serious reading and discussion, if you enjoy History, if you want to expand both our mind and your vocabulary, this course is for you. **Cross-Listed:** MLT 266 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** REE

EGL 286 - Transnational Literature, Film, and Theory

Course Units: 1.0 While modern colonialism dating back to the 18th century brought the entire globe into contact, the nation-state remained the relevant unit of culture. Unprecedented levels of migration and technological development in the past century, however, have made it impossible to ignore the fact that we are now living in a thoroughly transnational world-a new world order whose contours we yet barely grasp. How do social identity formations shift when nation-state boundaries are challenged? What sorts of new ethical dilemmas and self-other relations are engendered? Is anti-colonialism, staged as it was in the theater of national liberation, de-fanged or enabled by transnationalism? What new aesthetic forms and modes are generated by transnationalism; and how do cosmopolitans, exiles, diasporics, hybrids, and long-distance nationalists affect the field of culture? These are among the questions we will examine over the course of the term through the complementary lenses of film, literature, and theory. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of instructor. **CC:** HUL, HUM, WAC **ISP:** FLM

EGL 287 - Gender and Sexuality in Film

Course Units: 1.0 This course examines the intersecting roles played by gender and sexuality in our media, with particular emphasis placed on film and video. Over the course of the semester, we will investigate the ways in which various media texts transmit and construct gender and sexuality and how viewers interpret and integrate these representations into their daily lives. As we analyze films by such directors as Alfred Hitchcock, Douglas Sirk, Julie Dash, Trinh T. Minh-ha, and Jonathan Caouette we will explore the ways in which conceptions of gender and sexuality are facilitated and constrained by legal, medical, and ethical discourses that emerge from specific historical and geographic contexts. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of instructor. **CC:** HUM, WAC **ISP:** FLM, GSW

EGL 288 - Film as Fictive Art

Course Units: 1.0 What exactly does the designation "indie" mean when both filmmakers who disseminate their work online and specialized divisions within Hollywood studios claim this term as their own? In this course we will trace the development of the independent cinema from the late 1960s when first-time directors challenged Hollywood norms to create the New American Cinema, through its heyday the 1990s, into the present era-where many argue it has become thoroughly institutionalized. In examining the enormously flexible characterization "independent" we will draw on of a variety of code systems (cultural, artistic, narrative, cinematic, and intertextual) to analyze the work of such directors as George Romero, Julie Dash, Todd Haynes, Mira Nair, Jim Jarmusch, Spike Lee, and Kelly Reichardt. **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC, GCAD, GLIT, GSPE **ISP:** AMS, FLM

EGL 289 - The Essay Film Workshop

Course Units: 1.0 Deriving its meaning from the French *essayer*: to try; to attempt, the essay film is an experiment in form and expression. Weaving together elements of fiction and documentary, the essay film foregrounds the subjectivity of the filmmaker and engages the viewer as participant and collaborator. Relying heavily on montage, the essay film often employs found footage as well as cinema verité techniques-where the camera acts as quasi-therapist, eliciting new performances and confessions. In an approach combining theory and practice, we will explore the many aspects of the essay film genre. Foundational readings by Michel de Montaigne, Georg Lukács, and Phillip Lopate will be paired with visual essay by Issac Julian, Chantal Akerman, Mona Hatoum, and Marlon Riggs among others. Experimenting with form and method, students will produce weekly writings and visual exercises and an extended essay film. **Cross-Listed:** FLM 289 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, FLM

EGL 290 - Studies in Film Genre/Style: Film Noir

Course Units: 1.0

Over the course of the term, we will analyze the history and aesthetics of genre categories and their revisions with respect to specific codes and characteristics, audience expectations, technological developments, and publicity practices. In our investigation of the question of genre, we will engage such key concepts in film theory as authorship, narrative, mise-en-scène, suture, spectatorship, and the gaze. As we seek to understand why genres gain popularity in certain historical moments and the ways in which genres are revised, we will employ a variety of critical tools, drawn from genre theory, critical race studies, environmental studies, and theories of gender and sexuality. Finally, we will ask whether genre studies as a critical approach is keeping pace with the many new developments shaping cinematic form.

Film Noir

This term, our investigation of genre will focus specifically on film noir. We will study the genre's emergence from German Expressionism, pre-code gangster movies, screwball comedy, and hard-boiled detective fiction and consider the historical factors that led to the burgeoning of film noir in the 1940s and 50s. In addition to the standard characters (detective, femme fatal, gangsters, "deviants"), we will analyze filmic styles (low-key lighting, voice-over narration, etc.) and themes of alienation, corruption and existential drift that characterize the genre. From its origins in post-World War II America, we will explore film noir's radical revisions and geographic relocations as it is taken up in such places as France, Hong Kong, Korea, and Mexico. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUM, WAC, JLIT, JSPE **ISP:** AMS, FLM

EGL 291 - From the Drama Desk: Performance, Culture & Creativity Drama Criticism Workshop

Course Units: 1.0 This is an intensive and practical course on reading and writing dramatic criticism. A look at the concepts and practices of theater criticism in American Theater begins with a discussion of major theories of Western drama, from Aristotle to Artaud. Through the reading and discussion of contemporary examples of dramatic criticism and directed studies in techniques of journalistic writing students will gain an understanding of the nature and function of a theater review and an ability to critically view theater productions. Writing will include research essays, response papers and critical reviews of play scripts as well as performances on campus and at professional theaters. **Cross-Listed:** ATH 240 **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUM, LCC, WAC, JCAD, JCHF, JLIT, JSPE

EGL 292 - Contemporary American Theater and Drama

Course Units: 1.0 This course examines trends and notable works visible today in the American theater. We will read plays that have had major successes on Broadway and American regional theaters, as well as study avant-garde works and theatrical and performance artists engaging with new forms and techniques in order to transform theatrical performance in our culture today. Through class discussions and assignments including student presentations, seeing professional theatrical performances, research projects, and critical essays, students will develop their ability to engage critically with theatrical art and artists of our present moment. **Cross-Listed:** ATH **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUM, WAC, JCAD, JCHF, JLIT **ISP:** AMS, GSW

EGL 293 - Workshop in Poetry

Course Units: 1.0 This is a course for students with a serious interest in writing poetry. Classes will be divided between discussions of literary technique, workshop critiques of student writing, and consideration of the work of several contemporary poets. Students will prepare a final portfolio of ten to fifteen pages. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 294 - Workshop in Fiction

Course Units: 1.0 This is a course for students with a serious interest in writing fiction and imaginative prose. We'll read and discuss plenty of contemporary fiction, with a particular focus on the short story, considering each piece from a writer's perspective: How is it put together? What makes it unique and interesting? How and what can we learn or steal from it for our own writing? Students will put into practice what we discover in our reading, developing skills at building characters, exploring narrative form, and honing their use of image and voice. Students will complete and revise a variety of exercises and creative pieces, including three short stories. Much of class time will be devoted to workshop discussion of student stories. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC

EGL 295 - Workshop in Creative Non-Fiction

Course Units: 1.0 In this workshop in creative nonfiction, students write personal stories and investigate the personal as an artistic space for deep reflection, healing, empowerment, and playfulness. We study CNF pieces written by both established practitioners of the genre and fellow students. Ultimately, we explore the fraught boundary between fiction and nonfiction and examine the implications in Dickinson's advice: 'Tell all the truth but tell it slant.' **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of instructor. **CC:** HUL, HUM, WAC

EGL 295H - English Honors Independent Project 1

Course Units: 0.0 **(TBD: Staff)** Requires faculty approval - credit earned upon completion of EGL 296H

EGL 296 - Screenwriting Workshop

Course Units: 1.0 This course is designed to introduce student to the art and craft of screenwriting. In addition, to screenplay format, we will investigate character development, structure, narrative style, dialogue, and techniques of visual storytelling. Screenings, screenplay analysis, outside reading, in-class discussion, as well as guest lectures will broaden students' understanding of the screenwriting process. By the end of the term, students will have completed several short scenes and one short screenplay. **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Compositon test, or permission of the instructor. For Film studies students, EGL 150 is recommended. **CC:** HUM, WAC, JLIT, JCAD **ISP:** AMS, FLM

EGL 296H - English Honors Independent Project 2

Course Units: 1.0 **Prerequisite(s):** EGL 295H **CC:** HUL, HUM

EGL 297 - Literary Research Practicum 1

Course Units: 0.0 **(TBD: Staff)** The English research practicum is designed to allow students to engage in advanced literary research during their undergraduate careers. Students will work on the research project of a faculty member, under that faculty member's direction. This course requires advance permission of the instructor, who sets the course requirements. To receive Pass/Fail credit equivalent to one course, the student must earn passing grades for three terms of the practicum experience. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test.

EGL 298 - Literary Research Practicum 2

Course Units: 0.0 **(TBD: Staff)** The English research practicum is designed to allow students to engage in advanced literary research during their undergraduate careers. Students will work on the research project of a faculty member, under that faculty member's direction. This course requires advance permission of the instructor, who sets the course requirements. To receive Pass/Fail credit equivalent to one course, the student must earn passing grades for three terms

of the practicum experience. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test.

EGL 299 - Literary Research Practicum 3

Course Units: 0.0 The English research practicum is designed to allow students to engage in advanced literary research during their undergraduate careers. Students will work on the research project of a faculty member, under that faculty member's direction. This course requires advance permission of the instructor, who sets the course requirements. To receive Pass/Fail credit equivalent to one course, the student must earn passing grades for three terms of the practicum experience. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test.

One Advanced course: 300-level or 400-level Seminar:

Advanced courses - Junior and Senior Seminars - are writing intensive and research oriented. ID Majors should be attuned in particular to the college's requirement of a WAC-R (many are 300-level) and of a WS, which in English are Senior Seminars - but may depend on the ID combination (see below under ID thesis).

Prerequisites: Students must take 3 courses, an Introductory-level course (unless exempt) and at least two 200-level courses, before enrolling in a Junior Seminar. Students must take 6 courses - an Introductory-level course (unless exempt), "Confronting the Canon" (190-99), and at least four 200-level courses - before enrolling in a Senior Seminar.

EGL 300 - Jr. Seminar: Poetry Workshop

Course Units: 1.0 A workshop course for students with some experience and a serious interest in the writing of poetry. **Prerequisite(s):** It is strongly recommended, although not required, that students have already taken EGL 293 . One 100-level and two 200-level English courses or instructor's permission. **CC:** HUL, HUM, WAC

EGL 301 - Jr. Seminar: Fiction Workshop: Writing Activist Fiction

Course Units: 1.0 In this intermediate-level fiction workshop, students will build skills in fiction writing and critiquing fiction, compile a portfolio of short stories, and gain insight to the landscape of contemporary creative writing. Our primary focus will be on student writing. Reading assignments will contribute to understanding contemporary fiction writing, with special attention on the short story and the craft of writing, from idea generation through revision. Some sections of this course will focus on a particular skill or aspect of the fiction writer's craft, such as writing dialogue, using research to write better fiction, or developing complex characters. Other sections will focus on a particular theme or subgenre such as the contemporary ghost story, activist fiction, autofiction, climate fiction, or historical fiction. Contact the instructor or the English Department for details on particular sections. **Prerequisite(s):** It is strongly recommended that students have already taken EGL 294. One 100-level and two 200-level English courses or instructor's permission. Previous workshop experience is recommended. **CC:** HUL, WAC, HUM

EGL 302 - Jr. Seminar: Literary Theory (Winter)

Course Units: 1.0 Reading involves more than just the reader and the text; when we read, our cultural and personal experiences inform our reading. This course considers different critical approaches to literature-from the history of English as a discipline onward - in an attempt to help contextualize reading practices. We will read primary critical texts, primary literary texts, and examples of literary criticism. We will discuss various schools of literary criticism, including (but not limited to) Structuralism, Post-structuralism, Marxism, Psychoanalysis, Feminism, Queer Theory, Disability Studies, Postcolonial Theory, and Critical Race Theory. By the end of the semester, students will be able to use appropriate terminology, produce critically informed readings, and speak authoritatively about different critical approaches to literature. This course prepares majors and ID majors to apply to write Honors theses. **Prerequisite(s):** It

is strongly recommended that petitioning students have GPA's of 3.3 or above. One 100-level and two 200-level English courses. **CC:** HUL, HUM, WAC, WAC-R **ISP:** GSW

EGL 304 - Jr. Seminar (Fall):

Course Units: 1.0 **Prerequisite(s):** One 100-level and two 200-level English courses or instructor's permission. **CC:** HUL, HUM, WAC

EGL 305 - Jr. Seminar (Winter): Global Ulysses

Course Units: 1.0 When James Joyce's novel *Ulysses* was published in 1922, critics praised it as a text which created new literary forms leading to a radical shift in the understanding of what literature was able to say and do. The advent of *Ulysses* is considered a watershed moment in the history of Anglophone literature and the novel is often hailed as the most important book of the 20th century. Yet, the text's publication also created a huge uproar for authors of fiction from around the globe. Joyce's ambitions to encompass and record, in a single text, all of Irish culture and minute details of the city of Dublin, inspired other authors to search for ways in which their own national culture could be summed up in a single text. In this seminar we will explore authors who have taken up the challenge to write a "*Ulysses* of their Own," using the formal experiments of Joyce's novel as a springboard to reflect on their own national literary traditions in the face of a rapidly changing and unevenly experienced modernity. We will read texts such as Alfred Döblin's *Berlin Alexanderplatz* (Germany); Yasunari Kawabata's *The Scarlet Gang of Asakusa* (Japan); GV Desani's *All About H. Hatterr* (India); Ahmet Hamdi Tanpınar's *A Mind at Peace* (Turkey); and Derek Walcott's *Omeros* (Saint Lucia). The seminar will introduce students to theoretical concepts integral to the study of Joyce's novel and its global reception such as multiple modernities, global modernisms, postcolonialism, encyclopedic form, translation and reception theory. **CC:** HUL, HUM, WAC-R

EGL 306 - Jr. Seminar (Spring): The Beatles, Motown, and Taylor Swift

Course Units: 1.0 This is a course on the cultural politics of popular music. Since pop music is, by definition, ephemeral - shaped by and to some degree shaping the attitudes of a particular time and place - it can offer insights into what those attitudes were. On the contrary, some pop music transcends its cultural milieu, thus revealing something deeper about our culture in general. The Beatles, the most influential and still the most popular band of the rock era, offer one example; the musicians of Motown and other predominantly African-American recording platforms like Stax-Volt, without whom there would be no Beatles, offer another. After examining the lasting contributions of these artists as a foundation, we will, in the last weeks of the term, look at more contemporary pop musicians and their impact. Taylor Swift will be the focus, but students may nominate their own candidates (Beyonce? Rihanna? The Replacements?) for pop immortality and impact as well. **Prerequisite(s):** One 100-level and two 200-level English courses or instructor's permission. **CC:** HUL, HUM, WAC-R **Note:** No musical knowledge is required for this course. An ability to keep time and notice stand-out musical elements (key modulations, odd or interesting chords) would be useful but is not required. If you can play a bit, though, feel free to do so.

EGL 400 - Sr. Seminar: Advanced Poetry Workshop

Course Units: 1.0 An advanced workshop course in the writing of poetry. **Prerequisite(s):** It is strongly recommended that students have already taken EGL 293 , EGL 300 . Six English courses or instructor's permission. **CC:** HUL, HUM, WS

EGL 401 - Sr. Seminar: Advanced Fiction Workshop

Course Units: 1.0 An advanced workshop course in the writing of fiction. **Prerequisite(s):** It is strongly recommended that students have already taken EGL 293 , EGL 301 . Six English courses or instructor's permission. **CC:** HUL, HUM, WS

EGL 402 - English Honors Thesis Seminar 1

Course Units: 0.0 A two-term course required for all English majors who are writing an honors senior thesis. The course is conducted mainly as a writing workshop to guide students through the process of writing a thesis. Workshops focus on developing the research and writing skills needed to complete a successful thesis. There will be weekly individual meetings with the instructor as well as weekly group meetings. The course instructor will direct your thesis. Credit depends on completing both 402 and 403. **CC:** WS

EGL 403 - English Honors Thesis Seminar 2

Course Units: 2.0 A two-term course required for all English majors who are writing an honors senior thesis. The course is conducted mainly as a writing workshop to guide students through the process of writing a thesis. Workshops focus on developing the research and writing skills needed to complete a successful thesis. There will be weekly individual meetings with the instructor as well as weekly group meetings. The course instructor will direct your thesis. Credit depends on completing both 402 and 403. **CC:** HUL, WS, HUM

EGL 404 - Sr. Seminar (Fall): The Faerie Queene

Course Units: 1.0 This course will explore Edmund Spenser's wild and wacky epic poem, *The Faerie Queene.* Published in 1596, *The Faerie Queene* is full of powerful women, knights, dragons, monsters, and more; its rich cast includes both Queen Elizabeth I and a young King Arthur. In depicting a world full of chivalry and adventure, this poem offers striking insights into how Shakespeare's contemporaries understood their society and themselves. Full of beautiful lyrics, comedy, and tragedy, *The Faerie Queene* shows the many different possibilities for thinking about how Renaissance readers viewed the relationship between poetry and social identity. This poem is thus a fascinating window into Renaissance society even as it explores issues still relevant today, from questions about female agency to religious prejudice to class and social conflict. Students will be offered guidance in developing their own projects to explore *The Faerie Queene*, and the focus of the class discussions will be determined by student interests**.** **Prerequisite(s):** Six English courses or instructor's permission. **CC:** WS

EGL 405 - Sr. Seminar (Winter):

Course Units: 1.0 **Prerequisite(s):** Six English courses or instructor's permission. **CC:** WS

EGL 406 - Sr. Seminar (Spring):

Course Units: 1.0 **Prerequisite(s):** Six English courses or instructor's permission. **CC:** WS **ISP:** AFR, AMS, GSWS

Interdepartmental majors must pay particular attention to the requirements of both departments and meet the college requirement that all students complete a WS. Inquire whether the other part of the ID Major requires a thesis since English does not; English students take a 400-level senior seminar for WS. English admits thesis students into the Honors thesis workshop by application only (see below).

Requirements for Honors in English (ID):

Students seeking interdepartmental honors in English have a 10-course requirement, the usual eight and the two-term thesis seminar. Be advised that Honors ID majors, like full Honors majors, *must take the Literary Theory course* EGL 302 *in winter of their Junior year* as their 300-level seminar (thesis will become their WS) and meet the other qualifications for honors.

In the two-term honors thesis seminar* students learn research methods, discuss their topics and approaches, share ideas and workshop their writing as they complete their individual theses under the direction of the seminar instructor. Prospective Honors thesis and Honors ID thesis writers take EGL 302 prior to applying to write a thesis, whether they

propose a creative or an analytical thesis. Students envisioning creative theses should have completed at least one creative writing workshop in the proposed genre. Interested students should discuss topics with their advisor and other departmental members in order to develop an appropriate thesis proposal. Prospective Honors thesis students apply by submitting a two-to three-page thesis proposal with a writing sample in the appropriate genre for review by the department's Honors thesis selection committee. Acceptance into the workshop is not guaranteed.

*Note: ID Honors thesis students enroll in IDM 498-499 (by application) yet participate in the Honors thesis workshop class, EGL 402-403.

English Minor

Requirements for the Minor:

English minors take six courses - three required and three elective - including the required courses below:

One Introductory Course * between 100-199 including "Confronting the Canon"

EGL 100 - The Study of Literature: Poetry

Course Units: 1.0 Students will explore the art of poetry by examining a selection of poems from at least three cultures and by considering how poetry conveys its complex meanings through voice, image, rhythm, as well as formal and experimental structures. Particular attention will be given to developing reading and writing skills. 100-level courses are open to all students. **CC:** HUL, WAC, HUM

EGL 101 - The Study of Literature: Fiction

Course Units: 1.0 Students will explore fictional works from at least three cultures. Emphasis will be placed on exploring the art of narrative - considering the ways stories get told and the reasons for telling them. Attention may be paid to such concerns as narrative point of view, storytelling strategies and character development, the relationship between oral and written narrative traditions, and narrative theory. Particular attention will be given to developing reading and writing skills. 100-level courses are open to all students. **CC:** HUL, WAC, HUM, JLIT

EGL 102 - The Study of Literature: Dramatic Literature and Social Justice

Course Units: 1.0

In this course we will explore how plays engage audiences and readers in fundamental questions about human identity. Not only do plays acted on the stage abound in examples of characters who switch places or are mistaken for one another, they also provide a forum for individual characters to question their relationships with the people and culture that surround them. Even as plays stage the most private of feelings in a public setting, they also suggest that human interactions frequently involve playing a role. Dramatic literature puts front and center the ways in which many forms of identity-including gender and race-are socially constructed. At the same time that this course offers a wide-ranging introduction to the forms of dramatic literature, it will pay special attention to the ways in which play present questions of social justice. Who is given and denied agency? How do plays stage and raise awareness of problems of inequity? How do plays both reinforce and critique the stereotypes connected to gender, race and mental illness.
As we explore to the different forms of identity negotiated on the stage, we will be alert to how our own diverse experiences shape our experiences as readers and audience members. We will ask how plays such as *Antigone, Much Ado about Nothing,* and *A Doll's House* reveal the constrictions of gender roles. We will explore the varied ways in which plays such as *A Raisin in the Sun, Clybourne Park, Fences,* and *Sweat* represent the racism that interferes with

the full participation in the American Dream, seen in both employment and housing. And we will explore how *Water by the Spoonful* and *The Flick* represent the struggles of drug addiction, PTSD, anxiety, and depression in a diverse American Society .

100-level courses are open to all students. **Cross-Listed:** ATH 104 **CC:** HUL, WAC, HUM, JLIT

EGL 115 - Black Lives Matter Poetry

Course Units: 1

This course examines poetry that is part of the Black Lives Matter movement. We will investigate poetry as a form of protest for African Americans in the 21st Century and examine how it is used to resist white supremacy and violence against Black communities. Poet: Jericho Brown, Danez Smith, Ross Ray, Eve L. Ewing, Claudia Rakine, and more. Also, counts toward AFS, AMS.
100-level courses open to all students. **CC:** HUL, LCC, JCAD, JLIT, WAC **ISP:** AFR, AMS

EGL 116 - Poetry of People and Places

Course Units: 1

In the song "In My Life," John Lennon sings "Though I know I'll never lose affection / for people and things that went before / I know I'll often stop and think about them." The speaker sings about "people and things" that have shaped and continue to inform his identity. In this class, we will study poems that impact a person's sense of self and home. The poems we will read will explore history, family, place, race, class, gender, as well as love, sex, death, mourning, and joy, as these are the "stuff of life."
100-level courses are open to all students. **CC:** HUL, HUM, WAC, GCAD, GLIT

EGL 117 - Queer Poetry

Course Units: 1

This class will examine and interrogate poetry-its form, its content, and everything in between-with respect to queer poetic works. We will put diction, voice, rhythm, imagery, and form in conversation with social, cultural, and political issues that surround queer poetry. From single foundational poems to contemporary poetry collections, we will dive into the relationship between poetry and queer identity. This class has critical, creative, and collaborative components and you will be asked to do them all.
100-level courses are open to all students. **CC:** HUL, HUM, JCHF, JLIT, WAC **ISP:** GSW

EGL 119 - Decolonial Poetries

Course Units: 1

In this course we'll read and critically engage with contemporary poets writing predominantly in English from a decolonial perspective. From the intersection of poetics, aesthetics, decolonial (and anti-colonial) theory, and social justice in the arts, we will explore what a poetics of reading and writing decoloniality entails. By centering our exploration on poets who write from ongoing colonial experiences, we'll build an understanding of the work of poetry in decolonial imaginings. We will explore how decolonial poetic practices work against racism, colonialism, and other contemporary systems of oppression, and consider how decolonial poets respond to and engage with these systems both overtly and through their aesthetics. Students will develop an understanding of both traditional and experimental poetics, along with decolonial theories.
100-level courses opne to all students.

EGL 120 - Fictional Forms

Course Units: 1

This course introduces students to a variety of fictional forms. We consider what makes prose into literary fiction and develop an arsenal of key terms and ideas about narrative that will lay the groundwork either for further study or for lifelong learning and appreciation. Our primary sources range from oral stories to novels from around the globe to recent experiments in fiction, with particular emphasis on writers from underrepresented groups.
100-level courses are open to all students. **CC:** HUL, WAC, HUM

EGL 140 - Introduction to Digital Studies: Digitizing the Past

Course Units: 1 The digital age and the medieval period-two disparate phases of history-may at first blush appear to have nothing in common. Yet, as medieval scholars have shown, this myth is best dispelled in and through the medieval manuscript, a physical object representing the convergence of text and technology in its earliest form. Using the medieval manuscript as a case study, this class will introduce students to digital topics such as online storytelling, digital archives and curation, online exhibits, data interpretation, and more. Along the way, students will learn skills of technical literacy, written analysis, and archival interpretation using programs such as Omeka, Artsteps, Audacity, Voyant Tools, and StoryMaps. **Cross-Listed:** SMT 140, AAH **CC:** HUL, WAC, HUM

EGL 150 - Film Form and Analysis

Course Units: 1.0 **(Spring: Troxell)** In this course we will examine elements of film form such as cinematography, sound, editing, lighting, mise-en-scene, and narrative structure. Considering film an art form, a commercial product, a psychological experience, and a social practice, we will also pay close attention to issues of genre, performance, intertextuality and authorship. 100-level courses are open to all students. **CC:** HUL, WAC, HUM

EGL 188 - Cyborgs!

Course Units: 1 Cybernetic organisms, or "cyborgs," represent the ultimate integration of biology and technology since these are organisms living with abiotic parts. This exciting new interdisciplinary course will provide an introduction to the biological and computer science concepts fundamental to the development of cyborg technology as well as critical evaluation of the consequences of introducing such technology in society. Students taking this course will not just be trained how to develop cyborg technology, but whether or not such technology should be developed for society. **Cross-Listed:** BIO 088, CSC 088 **CC:** HUL, HUM, SCLB, SET, WAC, JDQR, JETS, JLIT JNPS

EGL 190 - Confronting the Canon: Reimagining Beowulf

Course Units: 1.0 In "Reimagining *Beowulf*," we'll examine one of the oldest and most enduring works of Old English literature, *Beowulf.* Through critical analysis and discussion, students will confront *Beowulf* not only as an epic poem but also as a cultural artifact that has evolved through time, shaping and being shaped by its place in the British literary canon. Exploring the complexities of representation, we'll examine how the text explores hierarchies of identity, power, religion, class, race, and gender. Moreover, this course challenges students to critically engage with *Beowulf*, questioning conventional interpretations and seeking alternative narratives within the text. By exploring marginalized perspectives and overlooked themes, our aim will be to recuperate and amplify voices often silenced in traditional analyses of this canonical text. EGL 190 may alternatively count as a pre-1700 credit for English majors. 100-level courses are open to all students. **CC:** HUL, WAC, HUM, JLIT

EGL 191 - Confronting the Canon: The Modernist Edition

Course Units: 1

Modernism, the literary movement that dominated in the West from about 1890-1950, has been a stronghold of white male privilege, subtended by deep seated anxieties about other bodies. In this section of "Confronting the Canon," we will consider the complicated legacy of modernism and its influence on more recent literary works; the often troubling personal and political legacy of modernist writers; the relationship between the modernist canon and perpetuation of white supremacy; and the ways in which modernism, and the scholarship about it, bolster a rigid heteronormative patriarchy. "Confronting the Canon" courses are cornerstones of the new English curriculum and required beginning with majors/minors in the class of 2025.
100-level courses are open to all students. **CC:** HUL, HUM, WAC **ISP:** AFR, GSW

EGL 192 - Confronting the Canon: What is an Empire?

Course Units: 1 The study of the relationship between literature and empire has overwhelmingly focused on a small core of European empires. This class will expand understanding of the relationship between imperialism and literature by examining novels, epics, and allegories written in entangled colonial networks in which Europe is influential, but not the sole player. Readings for this class will focus on empires located on the continents of Africa and Asia broadly defined, including the Zulu, Ottoman, Russian, Japanese, and Soviet
imperial formations. **CC:** HUL, HUM, WAC, GLIT, GCHF, GSPE **ISP:** AFR, AIS, GSWS

EGL 193 - Confronting the Canon: Confronting the Hero's Journey

Course Units: 1

This course will challenge traditional renderings of various heroic tales through the double-edged lens of queer and feminist theory. Our discussions will draw from various scenes and film screenings of classic stories that may include *The Epic of Gilgamesh,* the *Bhagavad Gita,* Ovid's *Metamorphoses*, Aeschylus's trilogy *The Oresteia*, Homer's *Odyssey*, Virgil's *Aeneid*, the story of Jesus, *Beowulf*, and several fairy tales, as well as slightly more contemporary classics such as Herman Hesse's *Siddhartha, the Lord of the Rings, Star Wars, The Matrix, Harry Potter,* and *The Wizard of Oz*, among others. "Confronting the Canon" courses are cornerstones of the new English curriculum and required beginning with majors/minors in the class of 2025. Also counts toward GSW.
100-level courses are open to all students. **CC:** HUL, HUM, JCHF, JLIT, JSPE, WAC **ISP:** GSW

EGL 194 - Confronting the Canon: Confronting Dido's Many Faces

Course Units: 1 This course introduces students to some of the foundational questions raised when interrogating & reconfiguring what has long been considered the traditional, Western literary canon. English classes, in many different educational settings, have an extensive history of perpetuating the "greatness" of texts by white, heterosexual, male authors, often at the expense of those works written by women, writers of color, & queer writers, among other diverse groups. "The Many Faces of Dido" will challenge traditional interpretations of Dido, portrayed in classical works of fiction, poetry, drama, & art. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** GSWS

- **Note:** These courses emphasize close reading of primary texts and help students acquire the vocabulary to speak and write clearly and intelligently about literature. The texts are chosen by the instructor of each section. Detailed descriptions are available before pre-enrollment each term.
  *See explanation of credit and placement for students who receive a 5 on their AP exams in English literature or English language.

One course focused predominately on literature by authors who are Black, Indigenous, or People of Color (BIPOC) from the following:

EGL 213 - Circum-Atlantic Revolutions

Course Units: 1.0 This course will draw on literary and historical writings and artwork that emerged before, during, and after the three revolutions that ravaged the circum-Atlantic world between 1765 and 1804. We will consider interconnected events leading up to each conflict and the consequences of war on racial, ethnic, gendered, and indigenous groups. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF,JLIT, JSPE **ISP:** AFR, AMS, GSWS

EGL 233 - 18-19th Century Early Literature of African Diaspora

Course Units: 1.0 This introductory survey course will trace African American movement towards literary and aesthetic mastery beginning with what Henry Louis Gates calls "oral writing." Readings begin with the first known written poems and progress from slave narratives and autobiography to essays and fiction. Authors include Phillis Wheatley, Harriet Jacobs, Frances Ellen Watkins Harper, Solomon Northup, Charles Chesnutt, W.E.B. Du Bois, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AFR, AMS, GSWS

EGL 237 - Reclamation & Renaissance: Black Literary Arts 1900 to 1960, "Dark Like Me - That is my Dream!"

Course Units: 1.0 In this course we will read literatures of African diaspora from the United States and from the English-speaking African Diaspora more broadly speaking, written in the early to mid- 20th century. This course is deliberately using the adjective Black instead of African American to highlight our awareness that the literature of the early 20th century is part of a Pan-African movement. Threads we will follow include: issues of identity (being American; being Black; racial and social passing); miscegenation; claims to culture through literature; political and social change through literature (is it possible?); self-representation and activism through literary arts; rise of pride in being part of African diaspora; gender roles in literary and social contexts. Questions we will raise and explore in the course of the term include: What is the relationship between aesthetic production and political action? What are the gendered aspects of the expressions of the writers and artists? How are "folk" forms incorporated into "literary" forms? How does self-representation operate in the reclamation of a sense of self? We will engage with the complexities of cultural diversities within the African diaspora while we contemplate the traditions we follow. We will begin, as the title of the course suggests, around the turn of the 20th century, when Du Bois writes that the "problem of the twentieth century is the problem of the color line" (Souls of Black Folk 45). We will move through what some called the Harlem Renaissance, during which time writers such as Langston Hughes celebrated being Black in a reclamation of the self: "Dark like me-That is my dream!" (Selected Poems 14). We will explore the literature of the pre- and post- WWII era, ending the term with what was known as the Black Arts Movement. The goal, in terms of content, is to provide you with a broad sampling of literature of the African Diaspora literature of the early 20th century, with a particular focus on literature (prose in the form of essays, short stories, novels; poetry; plays) generated from the United States while also reaching toward its more global pan-Africanist roots. I hope you will follow your interests and curiosities, after the course is over, to explore this literature further. (Also counts for Africana and American Studies). **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JLIT **ISP:** AFR, AMS

EGL 248 - Introduction to Black Poetry

Course Units: 1.0 We will explore the development of African-American poetic voices in North America. We will look at poems and poets as they constitute a hybrid and composite tradition. We will read poetry in anthologies; we will also read several full books by individual authors, and will listen to performance poetry on CD and DVD. A partial list of poets we will read includes Wheatley, Harper, Dunbar, Hughes, McKay, Helene Johnson, Brooks, Baraka, Clifton, Sanchez, Cortez, Morris, Mullen, Brathwaite, Komunyakaa, Francis, Dungy, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AFR, AMS

EGL 252 - The Islamic World and Global Literary Culture

Course Units: 1

The Islamic World and Global Literary culture course asks how two designations of the global - world literature and the Islamic world - think through the concepts of globalization and community. Using insights drawn from recent literary, sociological, and theological research we will consider the important and dynamic role of religion, specifically Islam, in contributing to cultural identity on a global scale.

Students will engage with literary and theoretical texts that have been produced within, by, and about these communities to explore how authors reckoned with the world community envisioned by Islam and how Islamic authors, both practicing and non-religious, have been received into the global literary sphere. In addition to reading canonical novels, topics covered will include critical and cultural theories related to world literary study such as orientalism, the role of translation, literary prize culture, non-Western feminisms, and minority studies. Students will read a challenging and engaging range of texts, including novels, essays, short stories and travelogues produced by artists engaging with diverse geographic and cultural backgrounds drawn from the Arab World, Turkey, the Indian subcontinent, as well as from diaspora communities in Europe and America. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, LCC, WAC, GLIT, GCHF, GSPE **ISP:** AIS

EGL 253 - Narratives of Haunting in US Ethnic Literature

Course Units: 1.0 This course examines the theme of haunting in contemporary US ethnic literature. With this theme in mind, we will investigate the following questions throughout the trimester: Why is haunting such a prevalent theme in ethnic writing? What do we mean when we say that a text is haunted? What are the causes of haunting? What is possession? What are some ways to dispossess or exorcise ghosts? What are the functions of ghosts? Is there such a thing as a good haunting? What are their messages to us? How do we listen to ghosts? Authors include Lan Cao, Nora Okja Keller, Maxine Hong Kingston, Cynthia Ozick, Toni Morrison, Sandra Cisneros, and Leslie Marmon Silko. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, JCHF, JLIT **ISP:** AMS, GSW

EGL 254 - Discourses on the Viet Nam/American War

Course Units: 1.0 This class will examine various perspectives on "The Vietnam War," or, as the people of Viet Nam call it, "The American War." In our archeological exploration into the nature of knowledge about this period in Viet Nam/U.S. history, we will not privilege one perspective over another. Rather, we will examine the diverse political, ideological, and moral positions from which various groups, such as the U.S. government, U.S. soldiers, U.S. citizens, the North Vietnamese people, and the South Vietnamese people, perceive this historic conflict. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, GCHF, GLIT **ISP:** AIS, AMS

EGL 255 - Asian American Literature and Film

Course Units: 1.0 If you are interested in the diverse history of Asian immigration in the U.S., take this course. Together as a class, we will examine major historical moments in Asian America: the first wave of Asian immigration in the mid-nineteenth century, the anti-Asian laws of the late nineteenth century, the Japanese internment during the Second World War, the emergence of Asian American studies during the 1960s Civil Rights Movement, Southeast Asian refugees after the Viet Nam/American War, and the contemporary turns to the transnational and the pan ethnic. To cover these historical moments, we will read the following texts: Island: Poetry and History of Chinese Immigrants on Angel Island, Eat a Bowl of Tea, Farwell to Manzanar, When Broken Glass Floats, American Born Chinese, and American Son. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AIS, AMS, FLM

EGL 256 - Southeast Asian-American Experience

Course Units: 1.0 This course examines the diverse literatures, histories, and cultures of the Vietnamese, Cambodian, Hmong and Laotian through the lens of war, migration, and return. Specific attention will be paid to how the War in Vietnam spread to neighboring countries such as Cambodia and Laos, resulting in mass migration of people from Southeast Asia to the West, specifically the United States. We will examine the literatures, oral testimonies, films, and music created by Southeast Asians in America. Possible authors include: Andrew Lam, Bich Minh Nguyen, Le Thi Diem Thuy, Loung Ung, Chanrithy Him, Kao Kalia Yang, Mai Neng Moua, and Burlee Vang. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AIS, AMS

EGL 262 - Global Modernisms

Course Units: 1.0

While traditionally modernism has been considered a largely European and North American affair, in recent years scholars have sought to contest and expand this canon. New research has shown that modernism existed all over the world, from Africa and Latin America, to the South Pacific and East Asia, and on all continents in between. This course introduces students to a new globally expanded understanding of modernism, while asking them to actively contribute to the ongoing expansion of the canon. We will work with new scholarship and archival materials, in order to better understand what happens to modernism as it spreads around the world.
Writers may include African writers such as Léopold Sédar Senghor, and Wole Soyinka; Caribbean writers Claude McKay and Aimé Césaire; Japanese poets, Hirato Renkichi and Chika Sagawa; Chinese writers such as Lu Xun and Eileen Zhang; Indian writers from Tagore and the Indian Progressive Writers Association to the 1960s avant-gardes; and Turkish modernists including Ahmet Hamdi Tanpınar and the Garip poets.

Students will have the opportunity to work with texts in any languages they may read, or to work exclusively in English (including in translation). By exploring literary criticism on modernism in its historical and global contexts, students will gain an understanding of major debates which have shaped modernist studies across the twentieth century including New Criticism, feminist studies, postcolonial studies, as well as more recent debates on the global turn including weak theory and "bad" modernisms. Students will also improve their writing and independent research skills through an anthology project that invites them to contribute to the ongoing canonization of global modernist texts through producing scholarly annotations, introductions, and digital editing. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, LCC, WAC, GLIT, GCHF, GSPE **ISP:** AIS

EGL 266 - Black Women Writers

Course Units: 1.0 This course provides an introduction to the major themes and concerns of twentieth- and twenty-first century African American women writers. We begin in the 18th century and move quickly to the 20th and 21st. We will examine the ways in which black womanhood is characterized through intersecting categories of race, gender, class, sexuality, and empire. We will explore how selected authors wrestle with stereotypical images of African American women, examine the connections between black womanhood, community, and empire, and discuss the benefits and limitations of the concept of "black women's writing." Possible writers include Frances Harper, Maria Stewart, Anne Spencer, Zora Neale Hurston, Gwendolyn Brooks, Toni Morrison, Audre Lorde, Gloria Naylor, Octavia Butler, and others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM **ISP:** AFR, AMS, GSW

EGL 268 - Staging Black Feminisms

Course Units: 1.0 This course considers the feminist and anti-racist practices of Black female dramatists, placing their plays within their cultural contexts. We will examine the ways in which these works construct Black feminist histories, genealogies, and cultures while challenging racial and sexual hierarchies in both American society and artistic canons. Each week, students will read a landmark dramatic text by a Black female playwright as well as seminal sociological texts and scholarly studies that contextualize the work within broader artistic and social movements. Through

discussions, field trips including attendance at theatrical performances and other cultural events, reading responses, and a final presentation based on individual research, students will hone their thinking about the development of Black female voices in American dramatic literature and society. **Cross-Listed:** SOC 209 and ATH 248 **Prerequisite(s):** One 100-level English ourse or a score of 5 on the AP English Language or Literature and Composition test. **CC:** SOCS, HUL, HUM, JCAD, JCHF, JLIT, JSPE **ISP:** AFR, GSW

EGL 269 - New Women around the World

Course Units: 1.0 The idea of the New Woman emerged around the world in the first half of the twentieth century. From Beijing to Berlin, Tokyo to Istanbul, women became visible as chorus girls, urban migrants, starlets, citizens, freedom fighters, consumers, and leisure seekers in new public spaces. This class will examine how literature represented and responded to the global phenomenon of the New Woman, tracing how various national, racial, and colonial contexts gave rise to distinct iterations of the New Woman and examining the linkages among the many geographical and political regions in which she appeared. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** JLIT, JCHF, WAC **ISP:** AFR, AIS, AMS, GSWS

One course from Shakespeare (200-201), pre-1700 (202-215), or a Seminar (300):

- **Shakespeare course:**

EGL 200 - Shakespeare to 1600

Course Units: 1.0

Shakespeare's works speak to perennial human concerns (ambition, unrequited love, the conflicts between generations), and he has even been lauded as the "inventor of the human." At the same time, his plays come from a very specific cultural milieu; he was a white man who lived in England from 1564-1616. In this course, we will explore the plays written in the first half of Shakespeare's career, collaborating to appreciate the rhetorical devices of Shakespeare's language and to understand the cultural milieu in which his plays were written. Some of the questions that we will ask include: How do structures of political and familial authority affect the characters' conceptions of their roles and duties? What possibilities do the plays offer for female empowerment? To what extent did Shakespeare's stage, which reached audiences of all classes, challenge contemporary conceptions of inherited nobility at a time of increasing social mobility?
Shakespeare's plays have at their center the question of performance; this makes them very well suited to exploring the multifaceted ways in which human identity is social constructed and socially expressed. In our readings of romantic comedies such as *A Midsummer Night's Dream* and *Much Ado About Nothing*, we will ask how both women and men are constricted by gendered expectations of honor. We will also explore the pernicious association between "fairness" and beauty in Shakespeare's time, discovering how expectations about women's supposed sexual and physical purity worked through references to offensive racial stereotypes about contamination. In our discussion of *The Merchant of Venice*, we will pay particular attention to how the privileging of upper-class, Christian men in the play and the religious othering of Shylock and Jessica contributes to a society in which injustice is hypocritically masked as mercy, and all characters suffer. Our examination of the history plays such as *Henry IV*, Part 1, will attend to the costs of creating an English national identity; in particular, we will explore how racial and gendered othering in these plays defines what it means to be English in way that privilege some and exclude others. **Cross-Listed:** ATH 256 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, WAC, HUM, JLIT

EGL 201 - Shakespeare after 1600

Course Units: 1.0 In this course we will explore plays written in the second half of Shakespeare's career. We will emphasize Shakespeare's great tragedies-works that retain their ability to astound readers and audiences today-but we'll also explore his later comedies, "problem plays," and tragicomic final works. We will collaborate to appreciate the sounds and meaning of Shakespeare's language, to think about the ways he structures plots and creates vivid characters, to understand the cultural milieu in which his plays were written, to make thematic connections across the plays, and to appreciate the plays as both literature and in performance. Shakespearean drama can be challenging to study, but the rewards are lifelong: revelry in language, a strong grounding in theatrical traditions that remain dominant in our culture, a deeper understanding of the actions and values that motivate human beings in society, and an engagement with dramatic works that continue to be reimagined worldwide. **Cross-Listed:** ATH 257 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, JCHF, JLIT, WAC

- **Pre-1700 course:**

EGL 202 - Amazons, Saints and Scholars: Women's Writing in the Middle Ages and Renaissance

Course Units: 1.0 This course explores the medieval and early modern female writers of England and France. We will ask: how did women respond in writing to the male-defined literary traditions and conventions of these eras? The course also provides an introduction to some of the major questions and works of feminist literary criticism, including: Why should we read the works of women? What aesthetic standards should we apply when discussing their works? Is there a difference between "masculine" and "feminine" writing? We will focus on six female writers: Marie de France, Christine de Pizan, Elizabeth Carey, Isabella Whitney, Amelia Lanyer, and Mary Sidney. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 203 - The Age of Heroes

Course Units: 1.0 In 410 the Romans abandoned Britain, withdrawing to the continent just as pagan Germanic raiders began to challenge the island's native Picts and Celts. In 1066 the Duke of Normandy crossed the Channel and kicked a Danish king off the throne of a fully Christianized England. In between these two events lies the matter of this course: the subtle and sophisticated literature, art, and culture of early medieval England. We will explore its evolution and wrestle with thorny questions about the significance and meaning it has been accorded over the centuries. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 204 - Plague, Revolt, Religion, and Nation: The Fourteenth Century

Course Units: 1.0 This course explores English literature as it reflects, shapes, and critiques society from the onset of the Hundred Years' War to the overthrow of Richard II (1337- 1400), a turbulent period that includes the Peasants' Revolt, the Black Plague, the rise of English as the language of literature and government, and the proto-Protestant movement known as Lollardy. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 205 - The Road to Canterbury

Course Units: 1.0 This class will focus on Geoffrey Chaucer's seminal work, *The Canterbury Tales*, as a way to introduce the language, culture, and literature of fourteenth-century England. We'll read selections of the Tales, learning the rudiments of written and spoken Middle English along the way. In addition, students will explore the following topics in relation to Chaucer's work: narrative and story-telling, literary authority, social and class status, gender, racial, religious, and sexual difference, cultural memory, and more. 100-level courses are open to all

students. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 206 - Gender in Renaissance Literature

Course Units: 1.0 This course explores English Renaissance texts from a variety of genres with an eye to the gender norms that they both created and critiqued. On the one hand, the early modern period offered very distinct roles for men and women. Men were expected to abide by a code of honor that emphasized bravery and action, while women were expected to be chaste, silent, and obedient. On the other hand, there were countless examples of these norms being challenged. Reading plays, poems, speeches, and conduct manuals, we will consider the complexity of their presentations of gender. **Prerequisite(s):** Any 100 level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT **ISP:** GSWS

EGL 207 - White Columns, White Narratives: Archi[text]ure and Race in the Middle Ages

Course Units: This course will examine the relationship between race, architecture, and literary production in the late medieval period (1000-1500). Students will be introduced to premodern critical race studies (PCRS) through the work of scholars who necessarily examine processes of racialization, architectural practice, and literary production in the medieval period. As a class, we'll use PCRS methods to interrogate medieval archi[text]ural narratives for the ways in which they participate in race-craft. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT, JCHF

EGL 208 - Renaissance Drama

Course Units: 1.0 Shakespeare and Marlowe were the Beatles-Stones, Red Sox-Yankees, everybody else-Kanye of their day: moral opposites and aesthetic rivals, but also mutual inspirations and at times even collaborators. Marlowe was the dynamic bad boy, drawn to dark characters mirroring his own troubled soul; Shakespeare, the reclusive genius, who worked in more subtle ways to delineate human behavior and challenge existing power structures. We'll see how they together created one of the world's most dynamic literary forms, modern English drama, and how that drama, along with the drama of their rivalry, continues to inform our own ideas about art and its cultural power. **Cross-Listed:** ATH **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 210 - British Literature: Seventeenth-Century Literature

Course Units: 1.0 This course will look at seventeenth-century literature and culture through the idea of revenge, which became a dominant form in an age of turmoil, injury, and change. We will begin with the early revenge plays of Shakespeare, Tourneur, Marston, Ford, and Webster, proceed through the cosmic revenge of Satan in *Paradise Lost*, and end with the ironic revenge exacted on moral goodness by the Restoration poets, playwrights, and philosophers. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 211 - Milton

Course Units: 1.0 The two sides of Milton - the high humanist poet, author of the greatest epic in English and one of the greatest religious poems in any language, and the Puritan revolutionary, defender of regicide and champion of the English commonwealth. The goal of the course will be to see if the two sides can be held separate, or if they must be seen as complementary. We will read Paradise Lost at the rate of one book per week, always trying to relate the two sides of the poet. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** REL

EGL 212 - The Restoration

Course Units: 1.0 This course will closely examine the culture that produced both the first official poet laureate of England, John Dryden, and the most notoriously libertine poet in English, the Earl of Rochester. Also appearing will be the first English woman to make a living from literature, Aphra Behn; the wittiest playwrights in English dramatic history (Wycherley, Etherege, Congreve); John Milton; some very early English novels; and some pretty good philosophers, including Thomas Hobbes, John Locke, and maybe even Sir Isaac Newton. All that and the Great Fire of London, outbreaks of the plague, several wars, and major revolutions in politics and science. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 213 - Circum-Atlantic Revolutions

Course Units: 1.0 This course will draw on literary and historical writings and artwork that emerged before, during, and after the three revolutions that ravaged the circum-Atlantic world between 1765 and 1804. We will consider interconnected events leading up to each conflict and the consequences of war on racial, ethnic, gendered, and indigenous groups. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF,JLIT, JSPE **ISP:** AFR, AMS, GSWS

- *Like EGL 213, EGL 190 Reimaging *Beowulf* may be used to fulfill the pre-1700 requirement - but one course may fulfill only one requirement.

- **300-level** seminar:**

EGL 300 - Jr. Seminar: Poetry Workshop

Course Units: 1.0 A workshop course for students with some experience and a serious interest in the writing of poetry. **Prerequisite(s):** It is strongly recommended, although not required, that students have already taken EGL 293 . One 100-level and two 200-level English courses or instructor's permission. **CC:** HUL, HUM, WAC

EGL 301 - Jr. Seminar: Fiction Workshop: Writing Activist Fiction

Course Units: 1.0 In this intermediate-level fiction workshop, students will build skills in fiction writing and critiquing fiction, compile a portfolio of short stories, and gain insight to the landscape of contemporary creative writing. Our primary focus will be on student writing. Reading assignments will contribute to understanding contemporary fiction writing, with special attention on the short story and the craft of writing, from idea generation through revision. Some sections of this course will focus on a particular skill or aspect of the fiction writer's craft, such as writing dialogue, using research to write better fiction, or developing complex characters. Other sections will focus on a particular theme or subgenre such as the contemporary ghost story, activist fiction, autofiction, climate fiction, or historical fiction. Contact the instructor or the English Department for details on particular sections. **Prerequisite(s):** It is strongly recommended that students have already taken EGL 294. One 100-level and two 200-level English courses or instructor's permission. Previous workshop experience is recommended. **CC:** HUL, WAC, HUM

EGL 302 - Jr. Seminar: Literary Theory (Winter)

Course Units: 1.0 Reading involves more than just the reader and the text; when we read, our cultural and personal experiences inform our reading. This course considers different critical approaches to literature-from the history of English as a discipline onward - in an attempt to help contextualize reading practices. We will read primary critical texts, primary literary texts, and examples of literary criticism. We will discuss various schools of literary criticism, including (but not limited to) Structuralism, Post-structuralism, Marxism, Psychoanalysis, Feminism, Queer Theory, Disability Studies, Postcolonial Theory, and Critical Race Theory. By the end of the semester, students will be able to use appropriate terminology, produce critically informed readings, and speak authoritatively about different critical

approaches to literature. This course prepares majors and ID majors to apply to write Honors theses. **Prerequisite(s):** It is strongly recommended that petitioning students have GPA's of 3.3 or above. One 100-level and two 200-level English courses. **CC:** HUL, HUM, WAC, WAC-R **ISP:** GSW

EGL 304 - Jr. Seminar (Fall):

Course Units: 1.0 **Prerequisite(s):** One 100-level and two 200-level English courses or instructor's permission. **CC:** HUL, HUM, WAC

EGL 305 - Jr. Seminar (Winter): Global Ulysses

Course Units: 1.0 When James Joyce's novel *Ulysses* was published in 1922, critics praised it as a text which created new literary forms leading to a radical shift in the understanding of what literature was able to say and do. The advent of *Ulysses* is considered a watershed moment in the history of Anglophone literature and the novel is often hailed as the most important book of the 20th century. Yet, the text's publication also created a huge uproar for authors of fiction from around the globe. Joyce's ambitions to encompass and record, in a single text, all of Irish culture and minute details of the city of Dublin, inspired other authors to search for ways in which their own national culture could be summed up in a single text. In this seminar we will explore authors who have taken up the challenge to write a "*Ulysses* of their Own," using the formal experiments of Joyce's novel as a springboard to reflect on their own national literary traditions in the face of a rapidly changing and unevenly experienced modernity. We will read texts such as Alfred Döblin's *Berlin Alexanderplatz* (Germany); Yasunari Kawabata's *The Scarlet Gang of Asakusa* (Japan); GV Desani's *All About H. Hatterr* (India); Ahmet Hamdi Tanpınar's *A Mind at Peace* (Turkey); and Derek Walcott's *Omeros* (Saint Lucia). The seminar will introduce students to theoretical concepts integral to the study of Joyce's novel and its global reception such as multiple modernities, global modernisms, postcolonialism, encyclopedic form, translation and reception theory. **CC:** HUL, HUM, WAC-R

EGL 306 - Jr. Seminar (Spring): The Beatles, Motown, and Taylor Swift

Course Units: 1.0 This is a course on the cultural politics of popular music. Since pop music is, by definition, ephemeral - shaped by and to some degree shaping the attitudes of a particular time and place - it can offer insights into what those attitudes were. On the contrary, some pop music transcends its cultural milieu, thus revealing something deeper about our culture in general. The Beatles, the most influential and still the most popular band of the rock era, offer one example; the musicians of Motown and other predominantly African-American recording platforms like Stax-Volt, without whom there would be no Beatles, offer another. After examining the lasting contributions of these artists as a foundation, we will, in the last weeks of the term, look at more contemporary pop musicians and their impact. Taylor Swift will be the focus, but students may nominate their own candidates (Beyonce? Rihanna? The Replacements?) for pop immortality and impact as well. **Prerequisite(s):** One 100-level and two 200-level English courses or instructor's permission. **CC:** HUL, HUM, WAC-R **Note:** No musical knowledge is required for this course. An ability to keep time and notice stand-out musical elements (key modulations, odd or interesting chords) would be useful but is not required. If you can play a bit, though, feel free to do so.

- **Pre-req: Students must take three courses-an Introductory-level course (unless exempt) and at least two 200-level courses-before enrolling in a 300-level seminar.

Three intermediate courses of choice (all 200-levels are the same difficulty):

EGL 200 - Shakespeare to 1600

Course Units: 1.0

Shakespeare's works speak to perennial human concerns (ambition, unrequited love, the conflicts between generations), and he has even been lauded as the "inventor of the human." At the same time, his plays come from a very specific cultural milieu; he was a white man who lived in England from 1564-1616. In this course, we will explore the plays written in the first half of Shakespeare's career, collaborating to appreciate the rhetorical devices of Shakespeare's language and to understand the cultural milieu in which his plays were written. Some of the questions that we will ask include: How do structures of political and familial authority affect the characters' conceptions of their roles and duties? What possibilities do the plays offer for female empowerment? To what extent did Shakespeare's stage, which reached audiences of all classes, challenge contemporary conceptions of inherited nobility at a time of increasing social mobility?
Shakespeare's plays have at their center the question of performance; this makes them very well suited to exploring the multifaceted ways in which human identity is social constructed and socially expressed. In our readings of romantic comedies such as *A Midsummer Night's Dream* and *Much Ado About Nothing*, we will ask how both women and men are constricted by gendered expectations of honor. We will also explore the pernicious association between "fairness" and beauty in Shakespeare's time, discovering how expectations about women's supposed sexual and physical purity worked through references to offensive racial stereotypes about contamination. In our discussion of *The Merchant of Venice*, we will pay particular attention to how the privileging of upper-class, Christian men in the play and the religious othering of Shylock and Jessica contributes to a society in which injustice is hypocritically masked as mercy, and all characters suffer. Our examination of the history plays such as *Henry IV*, Part 1, will attend to the costs of creating an English national identity; in particular, we will explore how racial and gendered othering in these plays defines what it means to be English in way that privilege some and exclude others. **Cross-Listed:** ATH 256 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, WAC, HUM, JLIT

EGL 201 - Shakespeare after 1600

Course Units: 1.0 In this course we will explore plays written in the second half of Shakespeare's career. We will emphasize Shakespeare's great tragedies-works that retain their ability to astound readers and audiences today-but we'll also explore his later comedies, "problem plays," and tragicomic final works. We will collaborate to appreciate the sounds and meaning of Shakespeare's language, to think about the ways he structures plots and creates vivid characters, to understand the cultural milieu in which his plays were written, to make thematic connections across the plays, and to appreciate the plays as both literature and in performance. Shakespearean drama can be challenging to study, but the rewards are lifelong: revelry in language, a strong grounding in theatrical traditions that remain dominant in our culture, a deeper understanding of the actions and values that motivate human beings in society, and an engagement with dramatic works that continue to be reimagined worldwide. **Cross-Listed:** ATH 257 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, JCHF, JLIT, WAC

EGL 202 - Amazons, Saints and Scholars: Women's Writing in the Middle Ages and Renaissance

Course Units: 1.0 This course explores the medieval and early modern female writers of England and France. We will ask: how did women respond in writing to the male-defined literary traditions and conventions of these eras? The course also provides an introduction to some of the major questions and works of feminist literary criticism, including: Why should we read the works of women? What aesthetic standards should we apply when discussing their works? Is there a difference between "masculine" and "feminine" writing? We will focus on six female writers: Marie de France, Christine de Pizan, Elizabeth Carey, Isabella Whitney, Amelia Lanyer, and Mary Sidney. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 203 - The Age of Heroes

Course Units: 1.0 In 410 the Romans abandoned Britain, withdrawing to the continent just as pagan Germanic raiders began to challenge the island's native Picts and Celts. In 1066 the Duke of Normandy crossed the Channel and kicked a Danish king off the throne of a fully Christianized England. In between these two events lies the matter of this course: the subtle and sophisticated literature, art, and culture of early medieval England. We will explore its evolution and wrestle with thorny questions about the significance and meaning it has been accorded over the centuries. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 204 - Plague, Revolt, Religion, and Nation: The Fourteenth Century

Course Units: 1.0 This course explores English literature as it reflects, shapes, and critiques society from the onset of the Hundred Years' War to the overthrow of Richard II (1337- 1400), a turbulent period that includes the Peasants' Revolt, the Black Plague, the rise of English as the language of literature and government, and the proto-Protestant movement known as Lollardy. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 205 - The Road to Canterbury

Course Units: 1.0 This class will focus on Geoffrey Chaucer's seminal work, *The Canterbury Tales*, as a way to introduce the language, culture, and literature of fourteenth-century England. We'll read selections of the Tales, learning the rudiments of written and spoken Middle English along the way. In addition, students will explore the following topics in relation to Chaucer's work: narrative and story-telling, literary authority, social and class status, gender, racial, religious, and sexual difference, cultural memory, and more. 100-level courses are open to all students. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 206 - Gender in Renaissance Literature

Course Units: 1.0 This course explores English Renaissance texts from a variety of genres with an eye to the gender norms that they both created and critiqued. On the one hand, the early modern period offered very distinct roles for men and women. Men were expected to abide by a code of honor that emphasized bravery and action, while women were expected to be chaste, silent, and obedient. On the other hand, there were countless examples of these norms being challenged. Reading plays, poems, speeches, and conduct manuals, we will consider the complexity of their presentations of gender. **Prerequisite(s):** Any 100 level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT **ISP:** GSWS

EGL 207 - White Columns, White Narratives: Archi[text]ure and Race in the Middle Ages

Course Units: This course will examine the relationship between race, architecture, and literary production in the late medieval period (1000-1500). Students will be introduced to premodern critical race studies (PCRS) through the work of scholars who necessarily examine processes of racialization, architectural practice, and literary production in the medieval period. As a class, we'll use PCRS methods to interrogate medieval archi[text]ural narratives for the ways in which they participate in race-craft. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT, JCHF

EGL 210 - British Literature: Seventeenth-Century Literature

Course Units: 1.0 This course will look at seventeenth-century literature and culture through the idea of revenge, which became a dominant form in an age of turmoil, injury, and change. We will begin with the early revenge plays of Shakespeare, Tourneur, Marston, Ford, and Webster, proceed through the cosmic revenge of Satan in *Paradise Lost*,

and end with the ironic revenge exacted on moral goodness by the Restoration poets, playwrights, and philosophers. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 211 - Milton

Course Units: 1.0 The two sides of Milton - the high humanist poet, author of the greatest epic in English and one of the greatest religious poems in any language, and the Puritan revolutionary, defender of regicide and champion of the English commonwealth. The goal of the course will be to see if the two sides can be held separate, or if they must be seen as complementary. We will read Paradise Lost at the rate of one book per week, always trying to relate the two sides of the poet. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** REL

EGL 212 - The Restoration

Course Units: 1.0 This course will closely examine the culture that produced both the first official poet laureate of England, John Dryden, and the most notoriously libertine poet in English, the Earl of Rochester. Also appearing will be the first English woman to make a living from literature, Aphra Behn; the wittiest playwrights in English dramatic history (Wycherley, Etherege, Congreve); John Milton; some very early English novels; and some pretty good philosophers, including Thomas Hobbes, John Locke, and maybe even Sir Isaac Newton. All that and the Great Fire of London, outbreaks of the plague, several wars, and major revolutions in politics and science. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 213 - Circum-Atlantic Revolutions

Course Units: 1.0 This course will draw on literary and historical writings and artwork that emerged before, during, and after the three revolutions that ravaged the circum-Atlantic world between 1765 and 1804. We will consider interconnected events leading up to each conflict and the consequences of war on racial, ethnic, gendered, and indigenous groups. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF,JLIT, JSPE **ISP:** AFR, AMS, GSWS

EGL 217 - Enlightenment and Romanticism

Course Units: 1.0 Consideration of the relationships between two major currents in modern European thought and culture: Enlightenment and Romanticism. Authors will range from Descartes to Nietzsche and may include Voltaire, Rousseau, Goethe, and Kant. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 220 - The Romantic Revolution

Course Units: 1.0 The Romantic period was one of Britain's most "revolutionary" eras in a number of important ways. For England, the age was marked by dramatic social, political, literary, and scientific upheaval and change. In this course we will investigate the various causes that were envisioned, promoted, and enacted during this era and trace their often wide-ranging and revolutionary effects. Readings will likely include selections from the following authors: William Wordsworth, Samuel Taylor Coleridge, William Blake, Mary Shelley, Lord Byron, Percy Bysshe Shelley, and John Keats. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, JCHF, JLIT, WAC

EGL 222 - Gendered Ecologies in the Long-Nineteenth Century

Course Units: This course will challenge gendered judgments and standardized principles represented in the masculinized canon of nineteenth-century nature writing and establishes a framework for women writers of the long nineteenth century, who were active contributors to the discourse of natural history. These women writers engaged in critical observations of eco-materiality, analyzed their findings, and encrypted their discoveries of nature in their literary creations. Our course readings will focus on the works of several prominent, trans-Atlantic literary women from the long-nineteenth century whose multi-directional observations of animate and inanimate objects in the environmental sphere are founded on personal discoveries made while interacting with their surroundings. The aim of this course is to reconsider the place of women as naturalist writers and to foreground the salient contributions of literary women writers to the study of eco-feminism, botany, political ecology, and bio-communal systems. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, ENS, GSWS

EGL 223 - Jane Austen

Course Units: 1.0 Jane Austen has achieved what few other literary authors can boast: membership in "the canon" of "great authors" and an intensely devoted, energetic modern fan base complete with cosplay, fan fiction, pilgrimages, and a never-ending series of visual adaptations. Students will read Jane Austen's work in chronological order, explore some late 18th and early 19th century contexts (biographical, philosophical, literary, cultural, historical), become familiar with some of the central, current, and ongoing scholarly debates about Austen, and discuss the value of, and consider the insights revealed by, some modern adaptations of Austen's work. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 224 - 19th-Century Novel

Course Units: 1.0 This course on the 19th-century novel is an experiment in slow reading. According to David Mikics, "Reading better means reading more slowly. There is a quiet movement afoot on behalf of slowness: slow cooking, slow thinking, and yes, slow reading. In reaction against the breathless pace of our computer-driven world, writers on social trends have begun to extol the virtues of a more meditative, involved approach to many parts of our lives, and reading is no exception" (1). Together, we will spend the term slowly reading and rereading one substantial Victorian novel, focusing on slow reading as both experience and methodology. In addition to the novel, we will read around it: digging into primary and secondary source material to build a complete portrait of the novel itself, the cultural landscape that surrounded it, and its critical and artistic legacy. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 230 - Seduction in Early American Republic

Course Units: 1.0 In her seminal study, *Revolution and the Word*: *The Rise of the Novel in America*, Cathy N. Davidson argues that "literature is not simply words upon a page but a complex social, political, and material process of cultural production" (viii). The eighteenth-century sentimental novel serves to highlight a moment in history lodged among judgments, anxieties and controversies about the direction the newly-formed American Republic would take at the end of the Revolution. Embedded within these narratives are questions about both men's and women's power and authority in the public and private spheres, the negation of the female self, the seductive function of romance and courtship, and the perception of women's bodies as moral, social, and biologic commodities. This course seeks to explore disjunctions between the sentimental structure of the early American novel and its contradictory attitudes toward liberty and self-expression. Through the lens of queer theory, affect theory, and new materialism, students will examine how seduction, homoerotica, and cross-dressing both reinforce and subvert American values and ideals that are distinct from European standards of morality. The readings will also consider how the cult of "true womanhood," prominent during the first few decades of the nineteenth century, suppressed pleas for women's equality. How do the texts under consideration help to define the new nation, its citizens, and boundaries? In what ways do these texts consolidate nationhood through the formation of a national literature and the narrative structure of a national history, culture, and consciousness? Do these novels construct, conserve, or undermine American cultural institutions? **Prerequisite(s):** One 100-level English

course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, GSWS

EGL 231 - Nineteenth-Century American Literature

Course Units: 1.0 This course focuses on the self-conscious development of literary tradition in 19th century America -- its meaning, its implications, its failures -- and its aesthetic and moral possibilities. Writers under consideration may include Emerson, Fuller, Thoreau, Douglass, Hawthorne, Melville, Dickinson, and Twain, and topics will include individualism, transcendentalism, abolition, the coming of war, the aftermath of war, growth, expansion, and power. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 233 - 18-19th Century Early Literature of African Diaspora

Course Units: 1.0 This introductory survey course will trace African American movement towards literary and aesthetic mastery beginning with what Henry Louis Gates calls "oral writing." Readings begin with the first known written poems and progress from slave narratives and autobiography to essays and fiction. Authors include Phillis Wheatley, Harriet Jacobs, Frances Ellen Watkins Harper, Solomon Northup, Charles Chesnutt, W.E.B. Du Bois, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AFR, AMS, GSWS

EGL 236 - Trans-Atlantic Realism and Naturalism

Course Units: 1.0 Realism and naturalism were aesthetic movements that emerged in American fiction between approximately 1865 and 1925. This course examines these two literary movements to show how writers of this era explored the trauma created by war (the Civil War and WWI), the moral consequences of freedom and sexual awareness, rapid urbanization and the Great Northern migration, inconsistencies between wealth and poverty, and innovative discoveries in science and technology. The purpose of this course, then, is to investigate how the authors of this period practiced their art both collectively and individually and the ways in which American social life informed the ideologies of realism and naturalism. Possible writers we will study include William Dean Howells, Stephen Crane, Frank Norris, Theodore Dreiser, Kate Chopin, Mary Wilkins Freeman, Mark Twain, Edith Wharton, Henry James, and Paul Laurence Dunbar. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, GSW

EGL 237 - Reclamation & Renaissance: Black Literary Arts 1900 to 1960, "Dark Like Me - That is my Dream!"

Course Units: 1.0 In this course we will read literatures of African diaspora from the United States and from the English-speaking African Diaspora more broadly speaking, written in the early to mid- 20th century. This course is deliberately using the adjective Black instead of African American to highlight our awareness that the literature of the early 20th century is part of a Pan-African movement. Threads we will follow include: issues of identity (being American; being Black; racial and social passing); miscegenation; claims to culture through literature; political and social change through literature (is it possible?); self-representation and activism through literary arts; rise of pride in being part of African diaspora; gender roles in literary and social contexts. Questions we will raise and explore in the course of the term include: What is the relationship between aesthetic production and political action? What are the gendered aspects of the expressions of the writers and artists? How are "folk" forms incorporated into "literary" forms? How does self-representation operate in the reclamation of a sense of self? We will engage with the complexities of cultural diversities within the African diaspora while we contemplate the traditions we follow. We will begin, as the title of the course suggests, around the turn of the 20th century, when Du Bois writes that the "problem of the twentieth century is the problem of the color line" (Souls of Black Folk 45). We will move through what some called the Harlem Renaissance, during which time writers such as Langston Hughes celebrated being Black in a reclamation of the self: "Dark like me-That is my dream!" (Selected Poems 14). We will explore the literature of the pre- and post- WWII era,

ending the term with what was known as the Black Arts Movement. The goal, in terms of content, is to provide you with a broad sampling of literature of the African Diaspora literature of the early 20th century, with a particular focus on literature (prose in the form of essays, short stories, novels; poetry; plays) generated from the United States while also reaching toward its more global pan-Africanist roots. I hope you will follow your interests and curiosities, after the course is over, to explore this literature further. (Also counts for Africana and American Studies). **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JLIT **ISP:** AFR, AMS

EGL 242 - Experimental Writing Workshop

Course Units: 1 Experimental writing explores language as a medium in unexpected and often surprising ways. This course will focus primarily on poetry, though poetry defined somewhat broadly, including mixed media, visual, and prose poetry. We'll read a variety of experimental texts, using them as launch points for our own experimental writing practices. This generative workshop will focus on the creation of new work using experimental techniques, while learning to engage deeply in reflective reading practices with each other's work. We'll experiment with constraint, computational poetry, hybrid and mixed media poetry, and generally be open to as many processes and approaches as we can. The goals of our workshop time, and our readings, will be to encourage you to develop new modes, skills, and techniques for writing creatively. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD

EGL 243 - The Poetic Object Workshop: Experimental Book Forms

Course Units: This course will explore the intersection between poetry and visual arts as a space for literary artistic production. Through demonstration and assignments students will write poetry and create prints and objects that integrate visual and textual elements. Students will practice combiningstructure, visual, and textual content in meaningful ways. **Cross-Listed:** AVA 353 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test or AVA 150 , or AVA 251 or AVA 252 or instructor's permission

EGL 244 - The Contemporary British Imagination

Course Units: 1.0 This course will examine contemporary British literary works. We will be reading closely, carefully, and critically about gender, sexuality, class, race, love, trauma, narrative, style, history, and more. This course will familiarize students with a sampling of the (often experimental) literature that the global Anglophone world has produced fairly recently; our selections will range from experimental short stories to books-turned-films to so-called "weird fiction," in order to address the following major questions: how does the contemporary British literary imagination develop? And, what, exactly, does it develop into? **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 247 - Studies in Modern Poets: Bob Dylan and Gary Snyder

Course Units: 1.0 This course is a study in the role of history in the ways that two poets, Bob Dylan and Gary Snyder, conceive of their work. Dylan's fascination with the music and history of America from the run-up to the Civil War through Reconstruction and the Great Depression, shapes his sense of useful subject matter, his development of the personae that inhabit his lyrics, and his range of rhetoric, from the nostalgic to the prophetic; it also places him squarely within contemporary controversies about the political uses of history. Gary Snyder's understanding that history extends to the natural world and our relationship to it is integral to his complex enterprise as a writer of poems and essays, as an activist and educator, and as a point of connection in a web of similarly concerned thinkers. His conception of history as a matter of bioregions rather than of nations and of tradition as a matter of wisdom rather than of identity unsettles the usual divisions between art, politics and science as well as our conventional expectations of poetry.
Prerequisite(s): One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD, JLIT **ISP:** AMS, REE

EGL 248 - Introduction to Black Poetry

Course Units: 1.0 We will explore the development of African-American poetic voices in North America. We will look at poems and poets as they constitute a hybrid and composite tradition. We will read poetry in anthologies; we will also read several full books by individual authors, and will listen to performance poetry on CD and DVD. A partial list of poets we will read includes Wheatley, Harper, Dunbar, Hughes, McKay, Helene Johnson, Brooks, Baraka, Clifton, Sanchez, Cortez, Morris, Mullen, Brathwaite, Komunyakaa, Francis, Dungy, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AFR, AMS

EGL 249 - Contemporary Poetry

Course Units: 1.0 In this course, we will take a close look at the work of five poets, three whose lives have spanned the American experience from the 1960s to the present (Peg Boyers, Carl Phillips, Frank Bidart) and two younger poets (Chelsea Woodard and Diane Mehta, both Union graduates). We'll take a look at the problem of the speaker in the poems (who may be the poet, more or less, or a mask, or a fiction, or some combination), which is also a way of asking questions about identity, history, and culture, as well as about freedom and restraint, the possibilities and limitations of language. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 250 - The Beats and Contemporary Culture

Course Units: 1.0 An examination of the writers of the Beat Generation (including Allen Ginsberg, Jack Kerouac, Gary Snyder, Edward Sanders) and of their lasting influence on American popular culture. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, GLIT, GCAD **ISP:** AMS, GSWS, REE

EGL 251 - World Literatures in English

Course Units: 1.0 Besides the USA, Canada, the UK and Ireland, there are dozens of countries where English is commonly spoken and written. From Australia to Zimbabwe, Belize to Nigeria, Jamaica to India, New Zealand to Kenya, literature in English is a world-wide phenomenon. In this course, students will read and analyze English-language poems, short stories, personal essays, and novels from a selection of far-flung countries, to learn about the peoples' cultures, histories, struggles, and achievements. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JLIT, JSPE **ISP:** AFR, REE

EGL 252 - The Islamic World and Global Literary Culture

Course Units: 1

The Islamic World and Global Literary culture course asks how two designations of the global - world literature and the Islamic world - think through the concepts of globalization and community. Using insights drawn from recent literary, sociological, and theological research we will consider the important and dynamic role of religion, specifically Islam, in contributing to cultural identity on a global scale.

Students will engage with literary and theoretical texts that have been produced within, by, and about these communities to explore how authors reckoned with the world community envisioned by Islam and how Islamic authors, both practicing and non-religious, have been received into the global literary sphere. In addition to reading canonical novels, topics covered will include critical and cultural theories related to world literary study such as orientalism, the role of translation, literary prize culture, non-Western feminisms, and minority studies. Students will read a challenging and engaging range of texts, including novels, essays, short stories and travelogues produced by artists engaging with diverse geographic and cultural backgrounds drawn from the Arab World, Turkey, the Indian

subcontinent, as well as from diaspora communities in Europe and America. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, LCC, WAC, GLIT, GCHF, GSPE **ISP:** AIS

EGL 253 - Narratives of Haunting in US Ethnic Literature

Course Units: 1.0 This course examines the theme of haunting in contemporary US ethnic literature. With this theme in mind, we will investigate the following questions throughout the trimester: Why is haunting such a prevalent theme in ethnic writing? What do we mean when we say that a text is haunted? What are the causes of haunting? What is possession? What are some ways to dispossess or exorcise ghosts? What are the functions of ghosts? Is there such a thing as a good haunting? What are their messages to us? How do we listen to ghosts? Authors include Lan Cao, Nora Okja Keller, Maxine Hong Kingston, Cynthia Ozick, Toni Morrison, Sandra Cisneros, and Leslie Marmon Silko. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, JCHF, JLIT **ISP:** AMS, GSW

EGL 254 - Discourses on the Viet Nam/American War

Course Units: 1.0 This class will examine various perspectives on "The Vietnam War," or, as the people of Viet Nam call it, "The American War." In our archeological exploration into the nature of knowledge about this period in Viet Nam/U.S. history, we will not privilege one perspective over another. Rather, we will examine the diverse political, ideological, and moral positions from which various groups, such as the U.S. government, U.S. soldiers, U.S. citizens, the North Vietnamese people, and the South Vietnamese people, perceive this historic conflict. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, GCHF, GLIT **ISP:** AIS, AMS

EGL 255 - Asian American Literature and Film

Course Units: 1.0 If you are interested in the diverse history of Asian immigration in the U.S., take this course. Together as a class, we will examine major historical moments in Asian America: the first wave of Asian immigration in the mid-nineteenth century, the anti-Asian laws of the late nineteenth century, the Japanese internment during the Second World War, the emergence of Asian American studies during the 1960s Civil Rights Movement, Southeast Asian refugees after the Viet Nam/American War, and the contemporary turns to the transnational and the pan ethnic. To cover these historical moments, we will read the following texts: Island: Poetry and History of Chinese Immigrants on Angel Island, Eat a Bowl of Tea, Farwell to Manzanar, When Broken Glass Floats, American Born Chinese, and American Son. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AIS, AMS, FLM

EGL 256 - Southeast Asian-American Experience

Course Units: 1.0 This course examines the diverse literatures, histories, and cultures of the Vietnamese, Cambodian, Hmong and Laotian through the lens of war, migration, and return. Specific attention will be paid to how the War in Vietnam spread to neighboring countries such as Cambodia and Laos, resulting in mass migration of people from Southeast Asia to the West, specifically the United States. We will examine the literatures, oral testimonies, films, and music created by Southeast Asians in America. Possible authors include: Andrew Lam, Bich Minh Nguyen, Le Thi Diem Thuy, Loung Ung, Chanrithy Him, Kao Kalia Yang, Mai Neng Moua, and Burlee Vang. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AIS, AMS

EGL 257 - Irish American Literature: Race, Gender, Sexuality

Course Units: 1.0 **(Fall: Bracken)** This course will provide an introduction to Irish American literature from the 19th century to the present day, looking at a number of issues. Specific attention will be paid to constructions of race, gender, and sexuality and the texts examine here will be explored with questions relation to these in mind. Throughout the course, we will consider race relations in 19th and 20th century US culture, new scholarship on the Black and Green Atlantic and trace the problematics of Irish America's (self) construction of whiteness. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUM, HUL, WAC **ISP:** GSW

EGL 258 - Changing Ireland

Course Units: 1.0 This course will be looking at the changing nature of Irish society since the economic boom of Celtic Tiger Ireland in the 1990's. EU membership, US investment and the effects of global internationalism have brought about radical culture transformations in the country which in turn are altering conventional meanings of Irishness and Irish identity. We will be looking at representations of this changing Ireland in literature and film, paying attention to issues such as new technologies, post-feminism, sexualities, race and ethnicity. Texts will include Martin McDonagh's *In Bruges*, Anne Enright's novel *The Wig My Father Wore*, and the poetry of Leanne O'Sullivan. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM **ISP:** FLM, GSWS

EGL 259 - Irish Literature and Film

Course Units: 1.0 The aim of this course is to introduce you to the field of Irish Studies, examining how issues relating to language, identity and nationhood are intimately connected in Irish literature and film. In this course we will be studying Irish literary texts from the beginning of the 19th century to the late 20th century, examined alongside a selection of contemporary films. This course will ask you to consider the ways in which cultural concerns of the Irish past continue to haunt the landscape of the present day, paying attention to issues of gender, class, race and sexuality. Texts will include Lady Morgan's *Wild Irish Girl*, Bram Stoker's *Dracula*, Samuel Beckett's *Waiting for Godot* and Neil Jordan's film *Michael Collins*. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, LCC, HUM **ISP:** FLM, GSWS

EGL 260 - James Joyce

Course Units: 1.0 This course will focus entirely on Irish writer James Joyce's modernist masterpiece *Ulysses*, published in 1922. This is a complex, challenging and experimental novel (900 pages), which uses stream of consciousness as its primary literary mode. Set on just one day, June 16th 1904, it tells the story of Leopold Bloom, Stephen Dedalus, and Molly Bloom as we learn of their pasts, presents and hopes for the future. Joyce's novel is a meditation on the lives of these characters, and the modern colonial Dublin they inhabit, however it is also a self-reflective piece of literature which foregrounds issues relating to language, style, and storytelling. In the course, we will successively read all of the chapters of *Ulysses*, analyzing it through a variety of critical paradigms, including post-colonialism, modernism, and feminism. We will also watch a number of films relating to Joyce and his work, such as Nora, Bloom, and Ulysses, and at the end of the course we will consider the commodification of Joyce as the 'Great Irish Writer' through the yearly Bloomsday celebrations of June 16th in Dublin. Students are encouraged to read Joyce's *Dubliners* and *A Portrait of the Artist as a Young Man* before the class begins. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM

EGL 261 - Modernism and Modernity

Course Units: 1.0 This course examines British fiction from the early twentieth-century, a period often referred to as the "modernist" era. The moderns experimented with new, different, and exciting ways of writing that perplexed many readers, yet such changes have come to be seen as important innovations in literary style. In addition to engaging with questions of form and style, the moderns were also interested in subjects that were previously viewed as taboo, questionable, and, as such, often unspeakable. These topics included trauma, the lasting effects of war, sexual

experimentation, adultery, insanity, and newly carved out gender and familial roles. Throughout our term together, we will critically consider, discuss, and write about the dynamic between the content of modernist writing and its innovative style and form. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** GSWS

EGL 262 - Global Modernisms

Course Units: 1.0

While traditionally modernism has been considered a largely European and North American affair, in recent years scholars have sought to contest and expand this canon. New research has shown that modernism existed all over the world, from Africa and Latin America, to the South Pacific and East Asia, and on all continents in between. This course introduces students to a new globally expanded understanding of modernism, while asking them to actively contribute to the ongoing expansion of the canon. We will work with new scholarship and archival materials, in order to better understand what happens to modernism as it spreads around the world.
Writers may include African writers such as Léopold Sédar Senghor, and Wole Soyinka; Caribbean writers Claude McKay and Aimé Césaire; Japanese poets, Hirato Renkichi and Chika Sagawa; Chinese writers such as Lu Xun and Eileen Zhang; Indian writers from Tagore and the Indian Progressive Writers Association to the 1960s avant-gardes; and Turkish modernists including Ahmet Hamdi Tanpınar and the Garip poets.

Students will have the opportunity to work with texts in any languages they may read, or to work exclusively in English (including in translation). By exploring literary criticism on modernism in its historical and global contexts, students will gain an understanding of major debates which have shaped modernist studies across the twentieth century including New Criticism, feminist studies, postcolonial studies, as well as more recent debates on the global turn including weak theory and "bad" modernisms. Students will also improve their writing and independent research skills through an anthology project that invites them to contribute to the ongoing canonization of global modernist texts through producing scholarly annotations, introductions, and digital editing. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, LCC, WAC, GLIT, GCHF, GSPE **ISP:** AIS

EGL 263 - Literature and Sexuality

Course Units: 1.0 By examining literary and cultural representations, this course both interrogates the politics and social dynamics of various sexual identities and subjectivities and examines complex representations of both gender and sexuality. This course also focuses on the literary study of important straight, gay, lesbian, queer, bisexual, and transgender writers within their evolving social, historical, and cultural contexts over the last few centuries. We will discuss some of the major critical debates both in literary studies and in gender and sexuality studies, asking and attempting to answer the following questions: How is sexuality represented in literature? How has the relationship between literature and sexuality evolved over time? Who creates the discourses on sexualized bodies and identities? How can we understand the relationship between lived experience and literary/cultural representations? What might be queer about literature? What makes a narrative queer? **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** GSW

EGL 266 - Black Women Writers

Course Units: 1.0 This course provides an introduction to the major themes and concerns of twentieth- and twenty-first century African American women writers. We begin in the 18th century and move quickly to the 20th and 21st. We will examine the ways in which black womanhood is characterized through intersecting categories of race, gender, class, sexuality, and empire. We will explore how selected authors wrestle with stereotypical images of African American women, examine the connections between black womanhood, community, and empire, and discuss the benefits and limitations of the concept of "black women's writing." Possible writers include Frances Harper, Maria Stewart, Anne Spencer, Zora Neale Hurston, Gwendolyn Brooks, Toni Morrison, Audre Lorde, Gloria Naylor, Octavia

Butler, and others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM **ISP:** AFR, AMS, GSW

EGL 267 - The Virginia Woolf

Course Units: 1 Virginia Woolf is, quite frankly, one of the most significant writers transnationally and transhistorically. Aside from her acclaimed, now often canonical novels, Woolf wrote short stories and essays; indeed, her letters and diaries, in addition, have become a core part of modernist literary history. This class examines Woolf and much, though notably not all, of her work within their social, cultural, and historical contexts. By tracing the evolution of Woolf's work, we will interrogate her stylistic innovations, shifting political ideologies, remarkable social circles, and complex life. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUM, HUL, WAC **ISP:** GSW

EGL 268 - Staging Black Feminisms

Course Units: 1.0 This course considers the feminist and anti-racist practices of Black female dramatists, placing their plays within their cultural contexts. We will examine the ways in which these works construct Black feminist histories, genealogies, and cultures while challenging racial and sexual hierarchies in both American society and artistic canons. Each week, students will read a landmark dramatic text by a Black female playwright as well as seminal sociological texts and scholarly studies that contextualize the work within broader artistic and social movements. Through discussions, field trips including attendance at theatrical performances and other cultural events, reading responses, and a final presentation based on individual research, students will hone their thinking about the development of Black female voices in American dramatic literature and society. **Cross-Listed:** SOC 209 and ATH 248 **Prerequisite(s):** One 100-level English ourse or a score of 5 on the AP English Language or Literature and Composition test. **CC:** SOCS, HUL, HUM, JCAD, JCHF, JLIT, JSPE **ISP:** AFR, GSW

EGL 269 - New Women around the World

Course Units: 1.0 The idea of the New Woman emerged around the world in the first half of the twentieth century. From Beijing to Berlin, Tokyo to Istanbul, women became visible as chorus girls, urban migrants, starlets, citizens, freedom fighters, consumers, and leisure seekers in new public spaces. This class will examine how literature represented and responded to the global phenomenon of the New Woman, tracing how various national, racial, and colonial contexts gave rise to distinct iterations of the New Woman and examining the linkages among the many geographical and political regions in which she appeared. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** JLIT, JCHF, WAC **ISP:** AFR, AIS, AMS, GSWS

EGL 270 - Imagining the Nation(s): Ireland/India

Course Units: 1.0 This course will explore the colonial and postcolonial literary histories of India and Ireland, exploring the decolonizing energies of both countries' key writers. A comparative class, we will analyze three important moments in Ireland and India's literary histories, focusing on the colonial, postcolonial, and globalized periods. Beginning with the colonial, the class will study the late 19th and early 20th century era, focusing on the writers Rabindranath Tagore and W.B. Yeats, both Nobel literature prize winners, modernist innovators, and decolonial activists for independence in their respective countries. Following this, we will move into the mid to late 20th century postcolonial periods of India and Ireland, specifically reading the work of Edna O'Brien and Arundhati Roy. Their work (and its reception) exposes many of the colonial legacies in post-independence, as well as its contradictions and gendered and religious repressions. Lastly, the course will consider the work of two contemporary 21st century writers, Sally Rooney and Meena Kandasamy, exploring zones of connection between globalization, colonial histories, gender and sexuality. **Prerequisite(s):** EGL 100 or EGL 101 or EGL 102 or a grade of 5 on the AP English Literature or Language test. **CC:** HUL, HUM, WAC-R **ISP:** GSWS

EGL 271 - Dark Deeds: Crime in the Adirondacks

Course Units: 1.0 Merriam Webster defines a crime as an illegal act for which someone can be punished by the government; especially: a gross violation of law. A crime, however, is also defined in moral and ethical terms, as a grave offense, especially against morality; something reprehensible, foolish, or disgraceful. Students in this course will explore a variety of literary and historical illustrations of each of these types of crimes as they have occurred in the Adirondack Mountains throughout history. As we investigate various illegal acts in the Adirondacks, we will also examine underlying moral crimes, such as poverty and economic depression, which have the potential to lead individuals toward a life of crime. We will explore Chester Gillette's 1906 murder of Grace Brown at Big Moose Lake and the highly sensationalized murder trial that ensued, alongside Theodore Dreiser's 1925 novel that was based on the murder and criminal case. We will analyze the prison system in the Adirondacks, and we'll investigate various mobsters who stayed in Saratoga Springs during the Prohibition Era. We will also explore the crime of contagion as we read works written about tuberculosis and various sanatoriums in Saranac Lake. Part of our class time will be held at the Kelly Adirondack Center (KAC), working in the Adirondack Research Library. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, ENS, LAW

EGL 272 - Indigenous Sovereignty: Indigiqueer and Two-Spirit Voices

Course Units: 1.0 Students will consider literary works from several Native American writers who challenge white privilege and modes of possession. Texts will support place consciousness and tribal revitalization through an intergenerational awareness of intercultural dialogue. The course will focus on Indigenous counter-narratives that endeavor to dislodge the dominance of canonical white writers and, using a queer theoretical lens, will explore ways to reframe binary heteronormative practices.Course readings will focus on the consequences of dualistic thinking, colonization, and Eurocentric ideals. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **ISP:** ENS

EGL 273 - Disability, Literature, and Society

Course Units: 1

Through close reading and analysis of literary and cultural representations of disability, this course provides an introduction to the interdisciplinary field of disability studies. We will take the social model perspective that the experience of a disability is shaped less by physical or intellectual difference than by social attitudes and material barriers to access as a point of departure. All of the texts we will discuss this term represent disability in one way or another, some more centrally than others. On the one hand, we will catalogue the ways that literary texts create and disseminate damaging cultural narratives about disabled individuals. On the other, we will consider how various artistic works can resist dominant cultural representations of disability and challenge deep-seated ideals of physical and cognitive normalcy. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test.
CC: JLIT, WAC

EGL 274 - Uncanny Texts: Literature and Psychoanalysis

Course Units: 1.0 By interrogating literary, cultural, and psychoanalytical texts, this course examines the relationship between literature and psychoanalysis; the two have been in close conversation since the early theoretical developments that began to define psychoanalysis. From Freud's use of Hamlet and The Sandman as key cornerstones of his own theories to the way that J.K. Rowling's Harry Potter and the Sorcerer's Stone illustrates Jacques Lacan's notion of the Mirror Stage, literature and psychoanalysis have been dialogically and dynamically intimate bedfellows. During our term, we will look at psychoanalytical writings by Sigmund Freud, Jacques Lacan, and others in conjunction with transhistorical literary and cultural texts. We will examine specific psychoanalytical concepts like the unconscious, desire, sublimation, shame, the uncanny, the death drive, the primal horde, infantile sexuality, and mourning and

melancholia. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** GSWS

EGL 275 - Autobiography

Course Units: 1.0 This course explores the development of the autobiographical genre from the late 18th century to the present day, beginning with Jean-Jacques Rousseau's *Confessions*. Through a combination of close reading, historical contextualization, and critical analysis, we will engage with key texts that have shaped the autobiographical form. Readings will focus on the interplay of memory, truth, and storytelling, as well as the ethical dimensions of self-representation. We will also explore the ways authors shape their life stories to reveal complex identities, cultural contexts, and historical moments. Reading lists vary widely from term to term. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 276 - Literature of the Manor House

Course Units: 1.0 In this course we will investigate the rich and complex history of the genre of English manor house fiction. Focusing on texts ranging from Jane Austen's *Northanger Abbey* and E. M. Forster's *Howards End* to Kazuo Ishiguro's *The Remains of the Day*, Sarah Waters' *The Little Stranger*, and Ian McEwan's *Atonement*, we will explore issues of gender, sexuality, race, and especially class in both course readings and class discussions. Furthermore, we'll examine a number of filmic representations of British country house life, including Robert Altman's *Gosford Park* and Julian Fellowes' *Downton Abbey*. In addition to crafting course papers, students will have the option to research, create, and showcase their own multi-media projects exploring virtual manor homes via a range of freely downloadable programs and platforms. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD, JLIT **ISP:** GSW, STS

EGL 277 - Philosophical Fiction

Course Units: 1.0 This course will deal with works of fiction in which philosophy or philosophical concepts play a significant role. A key issue is the relationship between ideas and (literary) form. Authors will come from a wide range of traditions and may include Descartes, Rousseau, Wordsworth, Nietzsche, Camus, Dostoevsky, Borges, Calvino, Lem, and Le Guin. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** REE

EGL 279 - Literature and Science

Course Units: 1.0 An interdisciplinary examination of the interactions between literature and science. Topics will vary from year to year and may include science writing, the representation of science and scientists in literature, literature inspired by science, literature and science as competing ways of knowing the world, the figurative dimension of scientific writing, and speculative fiction. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, STS

EGL 280 - Nature and Environmental Writing

Course Units: 1.0 This course will focus on the traditions of nature and environmental writing in the American context, with an emphasis on the social and cultural dynamics of the environment and environmental action. Among other questions, we will ask ourselves: How do class, gender, and race enter into the nexus of social interactions that shape our environment? What is the place of literature in community, literacy, and environmental activism? What are the connections between the ways we speak and write about the environment and our actions toward the environment? How does the wilderness concept affect the ways citizens have access to public spaces? We will consider the concept of "nature" as we move through the course, culminating (if you like) with some nature writing of your own. Readings

may include Thoreau; Carson; Leopold; Kingsolver, and selections from *Reading the Roots: American Nature Writing Before Walden*; *Colors of Nature*; Lauret Savoy, T*race: Memory, History, and the American Landscape*; and F. Marina Schauffler, *Turning to Earth: Stories of Ecological Conversion.* **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, ENS, STS

EGL 281 - Environmental Psychology and the American Literary Landscape

Course Units: 1.0 Environmental research psychologist Maria Vittoria Giuliani emphasizes that human-to-place attachments "not only permeate our daily life but very often appear also in the representations, idealizations and expressions of life and affect represented [in] literature." Indeed, many literary works emphasize humanity's basic attachment needs and the importance person-to-place bonds have in the development of the human psyche. American fiction writers frequently employ descriptions of American landscapes as inspiration for character and plot development, and American nature writers often emphasize the way in which wilderness environments may influence one's mental and physical health and emotional well-being. In fact, recent studies in the field of cognitive neuroscience provide empirical evidence to substantiate the theory that exposure to a natural environment may actually generate structural changes in the brain by increasing oxygenation and blood flow that occur in response to neural activity. Hence, this course will employ contemporary studies in place attachment, environmental psychology, and cognitive neuroscience to examine the way in which various literary works illustrate the important role environment plays in aiding or obstructing one's ability to think, reason, remember, problem-solve, process information, use language, or be creative. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, ENS

EGL 282 - The Theory of Things: Objects, Emotions, Ideas

Course Units: 1.0 Everybody wants things, needs things, likes things, loves things! Things drive economies, incite wars, save lives; things help us communicate, work, play, move, talk, not talk, and so much more. The theory of things derives from humanity's interest in material culture studies and the connections that can be made between people and physical objects. But there is so much more to consider when discussing 'things,' such as those things that are not physical objects-love, hate, desire, thoughts, feelings, moods, pain, concepts, ideas, and words, just to name a few. In this course, students will discuss both material and immaterial 'things' and in particular how 'things' affect people, predominantly marginalized individuals and groups. *Course developed with support from the Byron A. Nichols Fellowship for Faculty Development. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT, JCHF, JSPE **ISP:** GSW

EGL 283 - Pilgrims, Flâneurs, & Pranksters: The Walk in Literature

Course Units: 1.0 From the poems of William Wordsworth to contemporary novels such as Teju Cole's *Open City,* literary narratives often feature journeys taken on foot. Among other things, a walk, in literature, can structure plot, serve as metaphor, or anchor a stream-of-consciousness narrative within a physical setting. A walker, like a reader, is a consumer of sights. But she is also a producer of thoughts, words, and creative pathways through the world. In this course we will investigate the relationships between walking, thinking, reading, and writing, considering the ways we move through spaces (natural, urban, public, solitary) and the forces and questions that shape our experiences in those spaces. Our texts will include standard novels and essays, as well as work by walking artists like Richard Long, audio-video artist Janet Cardiff, and street artists, for whom the world is the page and the walker is the reader. You will write traditional academic papers, but we will also walk, and some assignments will encourage you to create walking texts of your own. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT

EGL 284 - Interactive Fiction Workshop

Course Units: 1 Interactive fiction is storytelling that uses technology to create an interactive "reading" experience, requiring the reader to make choices that influence the plot. In this course you are going to read, critique, and create interactive fiction. You'll develop your storytelling skills, and along the way you'll learn some programming concepts, and history of narrative. video games. We'll also consider how race, gender, class, sexuality, and (dis)ability shape our experiences of these games as players and writers. No previous CS experience is necessary. Students will need access to a laptop for class. **Cross-Listed:** CSC 084 **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of instructors. **CC:** HUL, HUM, SET, WAC, JCAD, JETS, JLIT **ISP:** AMS, GSW, STS

EGL 285 - Nabokov

Course Units: 1 Vladimir Nabokov was a language genius, expatriate, chess master, butterfly biologist, and one of the best literary stylist in English. His famous (and infamous) novel *Lolita* has been scandalous ever since its publication in 1955. His texts have inspired movies, passionate discussions, and a polyglot global following. In this class, we will read several of Nabokov's novels, short stories, and his autobiography. We will watch movies based on his books. If you love serious reading and discussion, if you enjoy History, if you want to expand both our mind and your vocabulary, this course is for you. **Cross-Listed:** MLT 266 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** REE

EGL 286 - Transnational Literature, Film, and Theory

Course Units: 1.0 While modern colonialism dating back to the 18th century brought the entire globe into contact, the nation-state remained the relevant unit of culture. Unprecedented levels of migration and technological development in the past century, however, have made it impossible to ignore the fact that we are now living in a thoroughly transnational world-a new world order whose contours we yet barely grasp. How do social identity formations shift when nation-state boundaries are challenged? What sorts of new ethical dilemmas and self-other relations are engendered? Is anti-colonialism, staged as it was in the theater of national liberation, de-fanged or enabled by transnationalism? What new aesthetic forms and modes are generated by transnationalism; and how do cosmopolitans, exiles, diasporics, hybrids, and long-distance nationalists affect the field of culture? These are among the questions we will examine over the course of the term through the complementary lenses of film, literature, and theory. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of instructor. **CC:** HUL, HUM, WAC **ISP:** FLM

EGL 287 - Gender and Sexuality in Film

Course Units: 1.0 This course examines the intersecting roles played by gender and sexuality in our media, with particular emphasis placed on film and video. Over the course of the semester, we will investigate the ways in which various media texts transmit and construct gender and sexuality and how viewers interpret and integrate these representations into their daily lives. As we analyze films by such directors as Alfred Hitchcock, Douglas Sirk, Julie Dash, Trinh T. Minh-ha, and Jonathan Caouette we will explore the ways in which conceptions of gender and sexuality are facilitated and constrained by legal, medical, and ethical discourses that emerge from specific historical and geographic contexts. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of instructor. **CC:** HUM, WAC **ISP:** FLM, GSW

EGL 288 - Film as Fictive Art

Course Units: 1.0 What exactly does the designation "indie" mean when both filmmakers who disseminate their work online and specialized divisions within Hollywood studios claim this term as their own? In this course we will trace the development of the independent cinema from the late 1960s when first-time directors challenged Hollywood norms to create the New American Cinema, through its heyday the 1990s, into the present era-where many argue it has become thoroughly institutionalized. In examining the enormously flexible characterization "independent" we will draw on of a variety of code systems (cultural, artistic, narrative, cinematic, and intertextual) to analyze the work of such directors as

George Romero, Julie Dash, Todd Haynes, Mira Nair, Jim Jarmusch, Spike Lee, and Kelly Reichardt. **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC, GCAD, GLIT, GSPE **ISP:** AMS, FLM

EGL 289 - The Essay Film Workshop

Course Units: 1.0 Deriving its meaning from the French *essayer*: to try; to attempt, the essay film is an experiment in form and expression. Weaving together elements of fiction and documentary, the essay film foregrounds the subjectivity of the filmmaker and engages the viewer as participant and collaborator. Relying heavily on montage, the essay film often employs found footage as well as cinema verité techniques-where the camera acts as quasi-therapist, eliciting new performances and confessions. In an approach combining theory and practice, we will explore the many aspects of the essay film genre. Foundational readings by Michel de Montaigne, Georg Lukács, and Phillip Lopate will be paired with visual essay by Issac Julian, Chantal Akerman, Mona Hatoum, and Marlon Riggs among others. Experimenting with form and method, students will produce weekly writings and visual exercises and an extended essay film. **Cross-Listed:** FLM 289 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, FLM

EGL 290 - Studies in Film Genre/Style: Film Noir

Course Units: 1.0

Over the course of the term, we will analyze the history and aesthetics of genre categories and their revisions with respect to specific codes and characteristics, audience expectations, technological developments, and publicity practices. In our investigation of the question of genre, we will engage such key concepts in film theory as authorship, narrative, mise-en-scène, suture, spectatorship, and the gaze. As we seek to understand why genres gain popularity in certain historical moments and the ways in which genres are revised, we will employ a variety of critical tools, drawn from genre theory, critical race studies, environmental studies, and theories of gender and sexuality. Finally, we will ask whether genre studies as a critical approach is keeping pace with the many new developments shaping cinematic form.

Film Noir

This term, our investigation of genre will focus specifically on film noir. We will study the genre's emergence from German Expressionism, pre-code gangster movies, screwball comedy, and hard-boiled detective fiction and consider the historical factors that led to the burgeoning of film noir in the 1940s and 50s. In addition to the standard characters (detective, femme fatal, gangsters, "deviants"), we will analyze filmic styles (low-key lighting, voice-over narration, etc.) and themes of alienation, corruption and existential drift that characterize the genre. From its origins in post-World War II America, we will explore film noir's radical revisions and geographic relocations as it is taken up in such places as France, Hong Kong, Korea, and Mexico. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUM, WAC, JLIT, JSPE **ISP:** AMS, FLM

EGL 291 - From the Drama Desk: Performance, Culture & Creativity Drama Criticism Workshop

Course Units: 1.0 This is an intensive and practical course on reading and writing dramatic criticism. A look at the concepts and practices of theater criticism in American Theater begins with a discussion of major theories of Western drama, from Aristotle to Artaud. Through the reading and discussion of contemporary examples of dramatic criticism and directed studies in techniques of journalistic writing students will gain an understanding of the nature and function of a theater review and an ability to critically view theater productions. Writing will include research essays, response papers and critical reviews of play scripts as well as performances on campus and at professional theaters. **Cross-Listed:** ATH 240 **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUM, LCC, WAC, JCAD, JCHF, JLIT, JSPE

EGL 292 - Contemporary American Theater and Drama

Course Units: 1.0 This course examines trends and notable works visible today in the American theater. We will read plays that have had major successes on Broadway and American regional theaters, as well as study avant-garde works and theatrical and performance artists engaging with new forms and techniques in order to transform theatrical performance in our culture today. Through class discussions and assignments including student presentations, seeing professional theatrical performances, research projects, and critical essays, students will develop their ability to engage critically with theatrical art and artists of our present moment. **Cross-Listed:** ATH **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUM, WAC, JCAD, JCHF, JLIT **ISP:** AMS, GSW

EGL 293 - Workshop in Poetry

Course Units: 1.0 This is a course for students with a serious interest in writing poetry. Classes will be divided between discussions of literary technique, workshop critiques of student writing, and consideration of the work of several contemporary poets. Students will prepare a final portfolio of ten to fifteen pages. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 294 - Workshop in Fiction

Course Units: 1.0 This is a course for students with a serious interest in writing fiction and imaginative prose. We'll read and discuss plenty of contemporary fiction, with a particular focus on the short story, considering each piece from a writer's perspective: How is it put together? What makes it unique and interesting? How and what can we learn or steal from it for our own writing? Students will put into practice what we discover in our reading, developing skills at building characters, exploring narrative form, and honing their use of image and voice. Students will complete and revise a variety of exercises and creative pieces, including three short stories. Much of class time will be devoted to workshop discussion of student stories. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC

EGL 295 - Workshop in Creative Non-Fiction

Course Units: 1.0 In this workshop in creative nonfiction, students write personal stories and investigate the personal as an artistic space for deep reflection, healing, empowerment, and playfulness. We study CNF pieces written by both established practitioners of the genre and fellow students. Ultimately, we explore the fraught boundary between fiction and nonfiction and examine the implications in Dickinson's advice: 'Tell all the truth but tell it slant.' **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of instructor. **CC:** HUL, HUM, WAC

EGL 296 - Screenwriting Workshop

Course Units: 1.0 This course is designed to introduce student to the art and craft of screenwriting. In addition, to screenplay format, we will investigate character development, structure, narrative style, dialogue, and techniques of visual storytelling. Screenings, screenplay analysis, outside reading, in-class discussion, as well as guest lectures will broaden students' understanding of the screenwriting process. By the end of the term, students will have completed several short scenes and one short screenplay. **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Compositon test, or permission of the instructor. For Film studies students, EGL 150 is recommended. **CC:** HUM, WAC, JLIT, JCAD **ISP:** AMS, FLM

EGL 296H - English Honors Independent Project 2

Course Units: 1.0 **Prerequisite(s):** EGL 295H **CC:** HUL, HUM

EGL 297 - Literary Research Practicum 1

Course Units: 0.0 **(TBD: Staff)** The English research practicum is designed to allow students to engage in advanced literary research during their undergraduate careers. Students will work on the research project of a faculty member, under that faculty member's direction. This course requires advance permission of the instructor, who sets the course requirements. To receive Pass/Fail credit equivalent to one course, the student must earn passing grades for three terms of the practicum experience. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test.

EGL 298 - Literary Research Practicum 2

Course Units: 0.0 **(TBD: Staff)** The English research practicum is designed to allow students to engage in advanced literary research during their undergraduate careers. Students will work on the research project of a faculty member, under that faculty member's direction. This course requires advance permission of the instructor, who sets the course requirements. To receive Pass/Fail credit equivalent to one course, the student must earn passing grades for three terms of the practicum experience. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test.

EGL 299 - Literary Research Practicum 3

Course Units: 0.0 The English research practicum is designed to allow students to engage in advanced literary research during their undergraduate careers. Students will work on the research project of a faculty member, under that faculty member's direction. This course requires advance permission of the instructor, who sets the course requirements. To receive Pass/Fail credit equivalent to one course, the student must earn passing grades for three terms of the practicum experience. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test.

English, B.A.

Requirements for the English major

Twelve courses, including:

One course between 100-189:

EGL 100 - The Study of Literature: Poetry

Course Units: 1.0 Students will explore the art of poetry by examining a selection of poems from at least three cultures and by considering how poetry conveys its complex meanings through voice, image, rhythm, as well as formal and experimental structures. Particular attention will be given to developing reading and writing skills. 100-level courses are open to all students. **CC:** HUL, WAC, HUM

EGL 101 - The Study of Literature: Fiction

Course Units: 1.0 Students will explore fictional works from at least three cultures. Emphasis will be placed on exploring the art of narrative - considering the ways stories get told and the reasons for telling them. Attention may be paid to such concerns as narrative point of view, storytelling strategies and character development, the relationship

between oral and written narrative traditions, and narrative theory. Particular attention will be given to developing reading and writing skills. 100-level courses are open to all students. **CC:** HUL, WAC, HUM, JLIT

EGL 102 - The Study of Literature: Dramatic Literature and Social Justice

Course Units: 1.0

In this course we will explore how plays engage audiences and readers in fundamental questions about human identity. Not only do plays acted on the stage abound in examples of characters who switch places or are mistaken for one another, they also provide a forum for individual characters to question their relationships with the people and culture that surround them. Even as plays stage the most private of feelings in a public setting, they also suggest that human interactions frequently involve playing a role. Dramatic literature puts front and center the ways in which many forms of identity-including gender and race-are socially constructed. At the same time that this course offers a wide-ranging introduction to the forms of dramatic literature, it will pay special attention to the ways in which play present questions of social justice. Who is given and denied agency? How do plays stage and raise awareness of problems of inequity? How do plays both reinforce and critique the stereotypes connected to gender, race and mental illness.
As we explore to the different forms of identity negotiated on the stage, we will be alert to how our own diverse experiences shape our experiences as readers and audience members. We will ask how plays such as *Antigone, Much Ado about Nothing,* and *A Doll's House* reveal the constrictions of gender roles. We will explore the varied ways in which plays such as *A Raisin in the Sun, Clybourne Park, Fences,* and *Sweat* represent the racism that interferes with the full participation in the American Dream, seen in both employment and housing. And we will explore how *Water by the Spoonful* and *The Flick* represent the struggles of drug addiction, PTSD, anxiety, and depression in a diverse American Society .

100-level courses are open to all students. **Cross-Listed:** ATH 104 **CC:** HUL, WAC, HUM, JLIT

EGL 110 - The Poetic Process

Course Units: 1.0 This course will introduce students to the pleasures of poetry by way of the process of creating it. Students will read and discuss poems by a diverse range of contemporary poets, respond to writing prompts that clarify the structure of these poems while encouraging individual experimentation, and complete a final portfolio of carefully revised assignments. 100-level courses are open to all students. **CC:** HUL, WAC, HUM, JCAD, JLIT

EGL 111 - Introduction to Creative Writing

Course Units: 1

In this multi-genre creative writing course, we'll read and write poetry, fiction and/or creative nonfiction, considering everything we read from a writer's perspective, asking what we can learn from it for our own writing. We'll read work by writers from diverse identities, perspectives, and aesthetic approaches; complete many writing exercises; and develop longer drafts outside of class. Students will gain editorial skills and will regularly share their writing with the group. This introductory course is appropriate for anyone who is curious about using language as a creative medium. 100-level course are open to all students. **CC:** HUL, WAC, HUM, JCAD, JLIT

EGL 115 - Black Lives Matter Poetry

Course Units: 1

This course examines poetry that is part of the Black Lives Matter movement. We will investigate poetry as a form of protest for African Americans in the 21st Century and examine how it is used to resist white supremacy and violence against Black communities. Poet: Jericho Brown, Danez Smith, Ross Ray, Eve L. Ewing, Claudia Rakine, and more. Also, counts toward AFS, AMS.

100-level courses open to all students. **CC:** HUL, LCC, JCAD, JLIT, WAC **ISP:** AFR, AMS

EGL 116 - Poetry of People and Places

Course Units: 1

In the song "In My Life," John Lennon sings "Though I know I'll never lose affection / for people and things that went before / I know I'll often stop and think about them." The speaker sings about "people and things" that have shaped and continue to inform his identity. In this class, we will study poems that impact a person's sense of self and home. The poems we will read will explore history, family, place, race, class, gender, as well as love, sex, death, mourning, and joy, as these are the "stuff of life."
100-level courses are open to all students. **CC:** HUL, HUM, WAC, GCAD, GLIT

EGL 117 - Queer Poetry

Course Units: 1

This class will examine and interrogate poetry-its form, its content, and everything in between-with respect to queer poetic works. We will put diction, voice, rhythm, imagery, and form in conversation with social, cultural, and political issues that surround queer poetry. From single foundational poems to contemporary poetry collections, we will dive into the relationship between poetry and queer identity. This class has critical, creative, and collaborative components and you will be asked to do them all.
100-level courses are open to all students. **CC:** HUL, HUM, JCHF, JLIT, WAC **ISP:** GSW

EGL 119 - Decolonial Poetries

Course Units: 1

In this course we'll read and critically engage with contemporary poets writing predominantly in English from a decolonial perspective. From the intersection of poetics, aesthetics, decolonial (and anti-colonial) theory, and social justice in the arts, we will explore what a poetics of reading and writing decoloniality entails. By centering our exploration on poets who write from ongoing colonial experiences, we'll build an understanding of the work of poetry in decolonial imaginings. We will explore how decolonial poetic practices work against racism, colonialism, and other contemporary systems of oppression, and consider how decolonial poets respond to and engage with these systems both overtly and through their aesthetics. Students will develop an understanding of both traditional and experimental poetics, along with decolonial theories.
100-level courses opne to all students.

EGL 120 - Fictional Forms

Course Units: 1

This course introduces students to a variety of fictional forms. We consider what makes prose into literary fiction and develop an arsenal of key terms and ideas about narrative that will lay the groundwork either for further study or for lifelong learning and appreciation. Our primary sources range from oral stories to novels from around the globe to recent experiments in fiction, with particular emphasis on writers from underrepresented groups.
100-level courses are open to all students. **CC:** HUL, WAC, HUM

EGL 140 - Introduction to Digital Studies: Digitizing the Past

Course Units: 1 The digital age and the medieval period-two disparate phases of history-may at first blush appear to have nothing in common. Yet, as medieval scholars have shown, this myth is best dispelled in and through the

medieval manuscript, a physical object representing the convergence of text and technology in its earliest form. Using the medieval manuscript as a case study, this class will introduce students to digital topics such as online storytelling, digital archives and curation, online exhibits, data interpretation, and more. Along the way, students will learn skills of technical literacy, written analysis, and archival interpretation using programs such as Omeka, Artsteps, Audacity, Voyant Tools, and StoryMaps. **Cross-Listed:** SMT 140, AAH **CC:** HUL, WAC, HUM

EGL 150 - Film Form and Analysis

Course Units: 1.0 **(Spring: Troxell)** In this course we will examine elements of film form such as cinematography, sound, editing, lighting, mise-en-scene, and narrative structure. Considering film an art form, a commercial product, a psychological experience, and a social practice, we will also pay close attention to issues of genre, performance, intertextuality and authorship. 100-level courses are open to all students. **CC:** HUL, WAC, HUM

EGL 188 - Cyborgs!

Course Units: 1 Cybernetic organisms, or "cyborgs," represent the ultimate integration of biology and technology since these are organisms living with abiotic parts. This exciting new interdisciplinary course will provide an introduction to the biological and computer science concepts fundamental to the development of cyborg technology as well as critical evaluation of the consequences of introducing such technology in society. Students taking this course will not just be trained how to develop cyborg technology, but whether or not such technology should be developed for society. **Cross-Listed:** BIO 088, CSC 088 **CC:** HUL, HUM, SCLB, SET, WAC, JDQR, JETS, JLIT JNPS

Note: These courses emphasize close reading of primary texts and help students acquire the vocabulary to speak and write clearly and intelligently about literature. The texts are individually chosen by the instructor of each section.

Detailed descriptions are available during pre-registration each term.

One "Confronting the Canon" course (between 190-199)

EGL 190 - Confronting the Canon: Reimagining Beowulf

Course Units: 1.0 In "Reimagining *Beowulf*," we'll examine one of the oldest and most enduring works of Old English literature, *Beowulf.* Through critical analysis and discussion, students will confront *Beowulf* not only as an epic poem but also as a cultural artifact that has evolved through time, shaping and being shaped by its place in the British literary canon. Exploring the complexities of representation, we'll examine how the text explores hierarchies of identity, power, religion, class, race, and gender. Moreover, this course challenges students to critically engage with *Beowulf*, questioning conventional interpretations and seeking alternative narratives within the text. By exploring marginalized perspectives and overlooked themes, our aim will be to recuperate and amplify voices often silenced in traditional analyses of this canonical text. EGL 190 may alternatively count as a pre-1700 credit for English majors. 100-level courses are open to all students. **CC:** HUL, WAC, HUM, JLIT

EGL 191 - Confronting the Canon: The Modernist Edition

Course Units: 1

Modernism, the literary movement that dominated in the West from about 1890-1950, has been a stronghold of white male privilege, subtended by deep seated anxieties about other bodies. In this section of "Confronting the Canon," we will consider the complicated legacy of modernism and its influence on more recent literary works; the often troubling personal and political legacy of modernist writers; the relationship between the modernist canon and perpetuation of white supremacy; and the ways in which modernism, and the scholarship about it, bolster a rigid heteronormative patriarchy. "Confronting the Canon" courses are cornerstones of the new English curriculum and required beginning with majors/minors in the class of 2025.

100-level courses are open to all students. **CC:** HUL, HUM, WAC **ISP:** AFR, GSW

EGL 192 - Confronting the Canon: What is an Empire?

Course Units: 1 The study of the relationship between literature and empire has overwhelmingly focused on a small core of European empires. This class will expand understanding of the relationship between imperialism and literature by examining novels, epics, and allegories written in entangled colonial networks in which Europe is influential, but not the sole player. Readings for this class will focus on empires located on the continents of Africa and Asia broadly defined, including the Zulu, Ottoman, Russian, Japanese, and Soviet
imperial formations. **CC:** HUL, HUM, WAC, GLIT, GCHF, GSPE **ISP:** AFR, AIS, GSWS

EGL 193 - Confronting the Canon: Confronting the Hero's Journey

Course Units: 1

This course will challenge traditional renderings of various heroic tales through the double-edged lens of queer and feminist theory. Our discussions will draw from various scenes and film screenings of classic stories that may include *The Epic of Gilgamesh,* the *Bhagavad Gita,* Ovid's *Metamorphoses*, Aeschylus's trilogy *The Oresteia*, Homer's *Odyssey*, Virgil's *Aeneid*, the story of Jesus, *Beowulf*, and several fairy tales, as well as slightly more contemporary classics such as Herman Hesse's *Siddhartha, the Lord of the Rings, Star Wars, The Matrix, Harry Potter,* and *The Wizard of Oz*, among others. "Confronting the Canon" courses are cornerstones of the new English curriculum and required beginning with majors/minors in the class of 2025. Also counts toward GSW.
100-level courses are open to all students. **CC:** HUL, HUM, JCHF, JLIT, JSPE, WAC **ISP:** GSW

EGL 194 - Confronting the Canon: Confronting Dido's Many Faces

Course Units: 1 This course introduces students to some of the foundational questions raised when interrogating & reconfiguring what has long been considered the traditional, Western literary canon. English classes, in many different educational settings, have an extensive history of perpetuating the "greatness" of texts by white, heterosexual, male authors, often at the expense of those works written by women, writers of color, & queer writers, among other diverse groups. "The Many Faces of Dido" will challenge traditional interpretations of Dido, portrayed in classical works of fiction, poetry, drama, & art. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** GSWS

Seven Intermediate Courses, including the following:

One Shakespeare course (200 or 201):

EGL 200 - Shakespeare to 1600

Course Units: 1.0

Shakespeare's works speak to perennial human concerns (ambition, unrequited love, the conflicts between generations), and he has even been lauded as the "inventor of the human." At the same time, his plays come from a very specific cultural milieu; he was a white man who lived in England from 1564-1616. In this course, we will explore the plays written in the first half of Shakespeare's career, collaborating to appreciate the rhetorical devices of Shakespeare's language and to understand the cultural milieu in which his plays were written. Some of the questions that we will ask include: How do structures of political and familial authority affect the characters' conceptions of their roles and duties? What possibilities do the plays offer for female empowerment? To what extent did Shakespeare's stage, which reached audiences of all classes, challenge contemporary conceptions of inherited nobility at a time of increasing social mobility?

Shakespeare's plays have at their center the question of performance; this makes them very well suited to exploring the multifaceted ways in which human identity is social constructed and socially expressed. In our readings of romantic comedies such as *A Midsummer Night's Dream* and *Much Ado About Nothing*, we will ask how both women and men are constricted by gendered expectations of honor. We will also explore the pernicious association between "fairness" and beauty in Shakespeare's time, discovering how expectations about women's supposed sexual and physical purity worked through references to offensive racial stereotypes about contamination. In our discussion of *The Merchant of Venice*, we will pay particular attention to how the privileging of upper-class, Christian men in the play and the religious othering of Shylock and Jessica contributes to a society in which injustice is hypocritically masked as mercy, and all characters suffer. Our examination of the history plays such as *Henry IV*, Part 1, will attend to the costs of creating an English national identity; in particular, we will explore how racial and gendered othering in these plays defines what it means to be English in way that privilege some and exclude others. **Cross-Listed:** ATH 256 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, WAC, HUM, JLIT

EGL 201 - Shakespeare after 1600

Course Units: 1.0 In this course we will explore plays written in the second half of Shakespeare's career. We will emphasize Shakespeare's great tragedies-works that retain their ability to astound readers and audiences today-but we'll also explore his later comedies, "problem plays," and tragicomic final works. We will collaborate to appreciate the sounds and meaning of Shakespeare's language, to think about the ways he structures plots and creates vivid characters, to understand the cultural milieu in which his plays were written, to make thematic connections across the plays, and to appreciate the plays as both literature and in performance. Shakespearean drama can be challenging to study, but the rewards are lifelong: revelry in language, a strong grounding in theatrical traditions that remain dominant in our culture, a deeper understanding of the actions and values that motivate human beings in society, and an engagement with dramatic works that continue to be reimagined worldwide. **Cross-Listed:** ATH 257 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, JCHF, JLIT, WAC

One course on literature before 1700 (202-215):

EGL 202 - Amazons, Saints and Scholars: Women's Writing in the Middle Ages and Renaissance

Course Units: 1.0 This course explores the medieval and early modern female writers of England and France. We will ask: how did women respond in writing to the male-defined literary traditions and conventions of these eras? The course also provides an introduction to some of the major questions and works of feminist literary criticism, including: Why should we read the works of women? What aesthetic standards should we apply when discussing their works? Is there a difference between "masculine" and "feminine" writing? We will focus on six female writers: Marie de France, Christine de Pizan, Elizabeth Carey, Isabella Whitney, Amelia Lanyer, and Mary Sidney. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 203 - The Age of Heroes

Course Units: 1.0 In 410 the Romans abandoned Britain, withdrawing to the continent just as pagan Germanic raiders began to challenge the island's native Picts and Celts. In 1066 the Duke of Normandy crossed the Channel and kicked a Danish king off the throne of a fully Christianized England. In between these two events lies the matter of this course: the subtle and sophisticated literature, art, and culture of early medieval England. We will explore its evolution and wrestle with thorny questions about the significance and meaning it has been accorded over the centuries. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 204 - Plague, Revolt, Religion, and Nation: The Fourteenth Century

Course Units: 1.0 This course explores English literature as it reflects, shapes, and critiques society from the onset of the Hundred Years' War to the overthrow of Richard II (1337- 1400), a turbulent period that includes the Peasants' Revolt, the Black Plague, the rise of English as the language of literature and government, and the proto-Protestant movement known as Lollardy. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 205 - The Road to Canterbury

Course Units: 1.0 This class will focus on Geoffrey Chaucer's seminal work, *The Canterbury Tales*, as a way to introduce the language, culture, and literature of fourteenth-century England. We'll read selections of the Tales, learning the rudiments of written and spoken Middle English along the way. In addition, students will explore the following topics in relation to Chaucer's work: narrative and story-telling, literary authority, social and class status, gender, racial, religious, and sexual difference, cultural memory, and more. 100-level courses are open to all students. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 206 - Gender in Renaissance Literature

Course Units: 1.0 This course explores English Renaissance texts from a variety of genres with an eye to the gender norms that they both created and critiqued. On the one hand, the early modern period offered very distinct roles for men and women. Men were expected to abide by a code of honor that emphasized bravery and action, while women were expected to be chaste, silent, and obedient. On the other hand, there were countless examples of these norms being challenged. Reading plays, poems, speeches, and conduct manuals, we will consider the complexity of their presentations of gender. **Prerequisite(s):** Any 100 level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT **ISP:** GSWS

EGL 207 - White Columns, White Narratives: Archi[text]ure and Race in the Middle Ages

Course Units: This course will examine the relationship between race, architecture, and literary production in the late medieval period (1000-1500). Students will be introduced to premodern critical race studies (PCRS) through the work of scholars who necessarily examine processes of racialization, architectural practice, and literary production in the medieval period. As a class, we'll use PCRS methods to interrogate medieval archi[text]ural narratives for the ways in which they participate in race-craft. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT, JCHF

EGL 208 - Renaissance Drama

Course Units: 1.0 Shakespeare and Marlowe were the Beatles-Stones, Red Sox-Yankees, everybody else-Kanye of their day: moral opposites and aesthetic rivals, but also mutual inspirations and at times even collaborators. Marlowe was the dynamic bad boy, drawn to dark characters mirroring his own troubled soul; Shakespeare, the reclusive genius, who worked in more subtle ways to delineate human behavior and challenge existing power structures. We'll see how they together created one of the world's most dynamic literary forms, modern English drama, and how that drama, along with the drama of their rivalry, continues to inform our own ideas about art and its cultural power. **Cross-Listed:** ATH **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 210 - British Literature: Seventeenth-Century Literature

Course Units: 1.0 This course will look at seventeenth-century literature and culture through the idea of revenge, which became a dominant form in an age of turmoil, injury, and change. We will begin with the early revenge plays of Shakespeare, Tourneur, Marston, Ford, and Webster, proceed through the cosmic revenge of Satan in *Paradise Lost*, and end with the ironic revenge exacted on moral goodness by the Restoration poets, playwrights, and philosophers. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 211 - Milton

Course Units: 1.0 The two sides of Milton - the high humanist poet, author of the greatest epic in English and one of the greatest religious poems in any language, and the Puritan revolutionary, defender of regicide and champion of the English commonwealth. The goal of the course will be to see if the two sides can be held separate, or if they must be seen as complementary. We will read Paradise Lost at the rate of one book per week, always trying to relate the two sides of the poet. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** REL

EGL 212 - The Restoration

Course Units: 1.0 This course will closely examine the culture that produced both the first official poet laureate of England, John Dryden, and the most notoriously libertine poet in English, the Earl of Rochester. Also appearing will be the first English woman to make a living from literature, Aphra Behn; the wittiest playwrights in English dramatic history (Wycherley, Etherege, Congreve); John Milton; some very early English novels; and some pretty good philosophers, including Thomas Hobbes, John Locke, and maybe even Sir Isaac Newton. All that and the Great Fire of London, outbreaks of the plague, several wars, and major revolutions in politics and science. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 213 - Circum-Atlantic Revolutions

Course Units: 1.0 This course will draw on literary and historical writings and artwork that emerged before, during, and after the three revolutions that ravaged the circum-Atlantic world between 1765 and 1804. We will consider interconnected events leading up to each conflict and the consequences of war on racial, ethnic, gendered, and indigenous groups. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF,JLIT, JSPE **ISP:** AFR, AMS, GSWS

- **FAQ**: The pre-1700 and the Shakespeare requirements must be fulfilled with two separate courses. A second Shakespeare course may count as an elective, but this practice does not substitute for a pre-1700 course.
- Given their subject matter, EGL 190 Reimagining Beowulf and EGL 404 Seminar: *The Faerie Queene* may be used to fulfill the 190s, the seminar, or the pre-1700 requirement, just like EGL 213 may be used to fulfill the BIPOC requirement - but one may not fulfill more than one requirement with the same course."

One course on eighteenth to nineteenth-century literature (216-236;282):

EGL 217 - Enlightenment and Romanticism

Course Units: 1.0 Consideration of the relationships between two major currents in modern European thought and culture: Enlightenment and Romanticism. Authors will range from Descartes to Nietzsche and may include Voltaire, Rousseau, Goethe, and Kant. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 220 - The Romantic Revolution

Course Units: 1.0 The Romantic period was one of Britain's most "revolutionary" eras in a number of important ways. For England, the age was marked by dramatic social, political, literary, and scientific upheaval and change. In this course we will investigate the various causes that were envisioned, promoted, and enacted during this era and trace their often wide-ranging and revolutionary effects. Readings will likely include selections from the following authors: William Wordsworth, Samuel Taylor Coleridge, William Blake, Mary Shelley, Lord Byron, Percy Bysshe Shelley, and John Keats. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, JCHF, JLIT, WAC

EGL 222 - Gendered Ecologies in the Long-Nineteenth Century

Course Units: This course will challenge gendered judgments and standardized principles represented in the masculinized canon of nineteenth-century nature writing and establishes a framework for women writers of the long nineteenth century, who were active contributors to the discourse of natural history. These women writers engaged in critical observations of eco-materiality, analyzed their findings, and encrypted their discoveries of nature in their literary creations. Our course readings will focus on the works of several prominent, trans-Atlantic literary women from the long-nineteenth century whose multi-directional observations of animate and inanimate objects in the environmental sphere are founded on personal discoveries made while interacting with their surroundings. The aim of this course is to reconsider the place of women as naturalist writers and to foreground the salient contributions of literary women writers to the study of eco-feminism, botany, political ecology, and bio-communal systems. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, ENS, GSWS

EGL 223 - Jane Austen

Course Units: 1.0 Jane Austen has achieved what few other literary authors can boast: membership in "the canon" of "great authors" and an intensely devoted, energetic modern fan base complete with cosplay, fan fiction, pilgrimages, and a never-ending series of visual adaptations. Students will read Jane Austen's work in chronological order, explore some late 18th and early 19th century contexts (biographical, philosophical, literary, cultural, historical), become familiar with some of the central, current, and ongoing scholarly debates about Austen, and discuss the value of, and consider the insights revealed by, some modern adaptations of Austen's work. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 224 - 19th-Century Novel

Course Units: 1.0 This course on the 19th-century novel is an experiment in slow reading. According to David Mikics, "Reading better means reading more slowly. There is a quiet movement afoot on behalf of slowness: slow cooking, slow thinking, and yes, slow reading. In reaction against the breathless pace of our computer-driven world, writers on social trends have begun to extol the virtues of a more meditative, involved approach to many parts of our lives, and reading is no exception" (1). Together, we will spend the term slowly reading and rereading one substantial Victorian novel, focusing on slow reading as both experience and methodology. In addition to the novel, we will read around it: digging into primary and secondary source material to build a complete portrait of the novel itself, the cultural landscape that surrounded it, and its critical and artistic legacy. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 230 - Seduction in Early American Republic

Course Units: 1.0 In her seminal study, *Revolution and the Word*: *The Rise of the Novel in America*, Cathy N. Davidson argues that "literature is not simply words upon a page but a complex social, political, and material process of cultural production" (viii). The eighteenth-century sentimental novel serves to highlight a moment in history lodged among judgments, anxieties and controversies about the direction the newly-formed American Republic would take at the end of the Revolution. Embedded within these narratives are questions about both men's and women's power and authority

in the public and private spheres, the negation of the female self, the seductive function of romance and courtship, and the perception of women's bodies as moral, social, and biologic commodities. This course seeks to explore disjunctions between the sentimental structure of the early American novel and its contradictory attitudes toward liberty and self-expression. Through the lens of queer theory, affect theory, and new materialism, students will examine how seduction, homoerotica, and cross-dressing both reinforce and subvert American values and ideals that are distinct from European standards of morality. The readings will also consider how the cult of "true womanhood," prominent during the first few decades of the nineteenth century, suppressed pleas for women's equality. How do the texts under consideration help to define the new nation, its citizens, and boundaries? In what ways do these texts consolidate nationhood through the formation of a national literature and the narrative structure of a national history, culture, and consciousness? Do these novels construct, conserve, or undermine American cultural institutions? **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, GSWS

EGL 231 - Nineteenth-Century American Literature

Course Units: 1.0 This course focuses on the self-conscious development of literary tradition in 19th century America -- its meaning, its implications, its failures -- and its aesthetic and moral possibilities. Writers under consideration may include Emerson, Fuller, Thoreau, Douglass, Hawthorne, Melville, Dickinson, and Twain, and topics will include individualism, transcendentalism, abolition, the coming of war, the aftermath of war, growth, expansion, and power. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 233 - 18-19th Century Early Literature of African Diaspora

Course Units: 1.0 This introductory survey course will trace African American movement towards literary and aesthetic mastery beginning with what Henry Louis Gates calls "oral writing." Readings begin with the first known written poems and progress from slave narratives and autobiography to essays and fiction. Authors include Phillis Wheatley, Harriet Jacobs, Frances Ellen Watkins Harper, Solomon Northup, Charles Chesnutt, W.E.B. Du Bois, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AFR, AMS, GSWS

EGL 236 - Trans-Atlantic Realism and Naturalism

Course Units: 1.0 Realism and naturalism were aesthetic movements that emerged in American fiction between approximately 1865 and 1925. This course examines these two literary movements to show how writers of this era explored the trauma created by war (the Civil War and WWI), the moral consequences of freedom and sexual awareness, rapid urbanization and the Great Northern migration, inconsistencies between wealth and poverty, and innovative discoveries in science and technology. The purpose of this course, then, is to investigate how the authors of this period practiced their art both collectively and individually and the ways in which American social life informed the ideologies of realism and naturalism. Possible writers we will study include William Dean Howells, Stephen Crane, Frank Norris, Theodore Dreiser, Kate Chopin, Mary Wilkins Freeman, Mark Twain, Edith Wharton, Henry James, and Paul Laurence Dunbar. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, GSW

EGL 282 - The Theory of Things: Objects, Emotions, Ideas

Course Units: 1.0 Everybody wants things, needs things, likes things, loves things! Things drive economies, incite wars, save lives; things help us communicate, work, play, move, talk, not talk, and so much more. The theory of things derives from humanity's interest in material culture studies and the connections that can be made between people and physical objects. But there is so much more to consider when discussing 'things,' such as those things that are not physical objects-love, hate, desire, thoughts, feelings, moods, pain, concepts, ideas, and words, just to name a few. In this course, students will discuss both material and immaterial 'things' and in particular how 'things' affect people,

predominantly marginalized individuals and groups. *Course developed with support from the Byron A. Nichols Fellowship for Faculty Development. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT, JCHF, JSPE **ISP:** GSW

One course on literature by authors who are Black, Indigenous, or People of Color (BIPOC):

EGL 213 - Circum-Atlantic Revolutions

Course Units: 1.0 This course will draw on literary and historical writings and artwork that emerged before, during, and after the three revolutions that ravaged the circum-Atlantic world between 1765 and 1804. We will consider interconnected events leading up to each conflict and the consequences of war on racial, ethnic, gendered, and indigenous groups. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF,JLIT, JSPE **ISP:** AFR, AMS, GSWS

EGL 233 - 18-19th Century Early Literature of African Diaspora

Course Units: 1.0 This introductory survey course will trace African American movement towards literary and aesthetic mastery beginning with what Henry Louis Gates calls "oral writing." Readings begin with the first known written poems and progress from slave narratives and autobiography to essays and fiction. Authors include Phillis Wheatley, Harriet Jacobs, Frances Ellen Watkins Harper, Solomon Northup, Charles Chesnutt, W.E.B. Du Bois, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AFR, AMS, GSWS

EGL 237 - Reclamation & Renaissance: Black Literary Arts 1900 to 1960, "Dark Like Me - That is my Dream!"

Course Units: 1.0 In this course we will read literatures of African diaspora from the United States and from the English-speaking African Diaspora more broadly speaking, written in the early to mid- 20th century. This course is deliberately using the adjective Black instead of African American to highlight our awareness that the literature of the early 20th century is part of a Pan-African movement. Threads we will follow include: issues of identity (being American; being Black; racial and social passing); miscegenation; claims to culture through literature; political and social change through literature (is it possible?); self-representation and activism through literary arts; rise of pride in being part of African diaspora; gender roles in literary and social contexts. Questions we will raise and explore in the course of the term include: What is the relationship between aesthetic production and political action? What are the gendered aspects of the expressions of the writers and artists? How are "folk" forms incorporated into "literary" forms? How does self-representation operate in the reclamation of a sense of self? We will engage with the complexities of cultural diversities within the African diaspora while we contemplate the traditions we follow. We will begin, as the title of the course suggests, around the turn of the 20th century, when Du Bois writes that the "problem of the twentieth century is the problem of the color line" (Souls of Black Folk 45). We will move through what some called the Harlem Renaissance, during which time writers such as Langston Hughes celebrated being Black in a reclamation of the self: "Dark like me-That is my dream!" (Selected Poems 14). We will explore the literature of the pre- and post- WWII era, ending the term with what was known as the Black Arts Movement. The goal, in terms of content, is to provide you with a broad sampling of literature of the African Diaspora literature of the early 20th century, with a particular focus on literature (prose in the form of essays, short stories, novels; poetry; plays) generated from the United States while also reaching toward its more global pan-Africanist roots. I hope you will follow your interests and curiosities, after the course is over, to explore this literature further. (Also counts for Africana and American Studies). **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JLIT **ISP:** AFR, AMS

EGL 248 - Introduction to Black Poetry

Course Units: 1.0 We will explore the development of African-American poetic voices in North America. We will look at poems and poets as they constitute a hybrid and composite tradition. We will read poetry in anthologies; we will also read several full books by individual authors, and will listen to performance poetry on CD and DVD. A partial list of poets we will read includes Wheatley, Harper, Dunbar, Hughes, McKay, Helene Johnson, Brooks, Baraka, Clifton, Sanchez, Cortez, Morris, Mullen, Brathwaite, Komunyakaa, Francis, Dungy, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AFR, AMS

EGL 252 - The Islamic World and Global Literary Culture

Course Units: 1

The Islamic World and Global Literary culture course asks how two designations of the global - world literature and the Islamic world - think through the concepts of globalization and community. Using insights drawn from recent literary, sociological, and theological research we will consider the important and dynamic role of religion, specifically Islam, in contributing to cultural identity on a global scale.

Students will engage with literary and theoretical texts that have been produced within, by, and about these communities to explore how authors reckoned with the world community envisioned by Islam and how Islamic authors, both practicing and non-religious, have been received into the global literary sphere. In addition to reading canonical novels, topics covered will include critical and cultural theories related to world literary study such as orientalism, the role of translation, literary prize culture, non-Western feminisms, and minority studies. Students will read a challenging and engaging range of texts, including novels, essays, short stories and travelogues produced by artists engaging with diverse geographic and cultural backgrounds drawn from the Arab World, Turkey, the Indian subcontinent, as well as from diaspora communities in Europe and America. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, LCC, WAC, GLIT, GCHF, GSPE **ISP:** AIS

EGL 253 - Narratives of Haunting in US Ethnic Literature

Course Units: 1.0 This course examines the theme of haunting in contemporary US ethnic literature. With this theme in mind, we will investigate the following questions throughout the trimester: Why is haunting such a prevalent theme in ethnic writing? What do we mean when we say that a text is haunted? What are the causes of haunting? What is possession? What are some ways to dispossess or exorcise ghosts? What are the functions of ghosts? Is there such a thing as a good haunting? What are their messages to us? How do we listen to ghosts? Authors include Lan Cao, Nora Okja Keller, Maxine Hong Kingston, Cynthia Ozick, Toni Morrison, Sandra Cisneros, and Leslie Marmon Silko. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, JCHF, JLIT **ISP:** AMS, GSW

EGL 254 - Discourses on the Viet Nam/American War

Course Units: 1.0 This class will examine various perspectives on "The Vietnam War," or, as the people of Viet Nam call it, "The American War." In our archeological exploration into the nature of knowledge about this period in Viet Nam/U.S. history, we will not privilege one perspective over another. Rather, we will examine the diverse political, ideological, and moral positions from which various groups, such as the U.S. government, U.S. soldiers, U.S. citizens, the North Vietnamese people, and the South Vietnamese people, perceive this historic conflict. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, GCHF, GLIT **ISP:** AIS, AMS

EGL 255 - Asian American Literature and Film

Course Units: 1.0 If you are interested in the diverse history of Asian immigration in the U.S., take this course. Together as a class, we will examine major historical moments in Asian America: the first wave of Asian immigration

in the mid-nineteenth century, the anti-Asian laws of the late nineteenth century, the Japanese internment during the Second World War, the emergence of Asian American studies during the 1960s Civil Rights Movement, Southeast Asian refugees after the Viet Nam/American War, and the contemporary turns to the transnational and the pan ethnic. To cover these historical moments, we will read the following texts: Island: Poetry and History of Chinese Immigrants on Angel Island, Eat a Bowl of Tea, Farwell to Manzanar, When Broken Glass Floats, American Born Chinese, and American Son. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AIS, AMS, FLM

EGL 256 - Southeast Asian-American Experience

Course Units: 1.0 This course examines the diverse literatures, histories, and cultures of the Vietnamese, Cambodian, Hmong and Laotian through the lens of war, migration, and return. Specific attention will be paid to how the War in Vietnam spread to neighboring countries such as Cambodia and Laos, resulting in mass migration of people from Southeast Asia to the West, specifically the United States. We will examine the literatures, oral testimonies, films, and music created by Southeast Asians in America. Possible authors include: Andrew Lam, Bich Minh Nguyen, Le Thi Diem Thuy, Loung Ung, Chanrithy Him, Kao Kalia Yang, Mai Neng Moua, and Burlee Vang. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AIS, AMS

EGL 262 - Global Modernisms

Course Units: 1.0

While traditionally modernism has been considered a largely European and North American affair, in recent years scholars have sought to contest and expand this canon. New research has shown that modernism existed all over the world, from Africa and Latin America, to the South Pacific and East Asia, and on all continents in between. This course introduces students to a new globally expanded understanding of modernism, while asking them to actively contribute to the ongoing expansion of the canon. We will work with new scholarship and archival materials, in order to better understand what happens to modernism as it spreads around the world.
Writers may include African writers such as Léopold Sédar Senghor, and Wole Soyinka; Caribbean writers Claude McKay and Aimé Césaire; Japanese poets, Hirato Renkichi and Chika Sagawa; Chinese writers such as Lu Xun and Eileen Zhang; Indian writers from Tagore and the Indian Progressive Writers Association to the 1960s avant-gardes; and Turkish modernists including Ahmet Hamdi Tanpınar and the Garip poets.

Students will have the opportunity to work with texts in any languages they may read, or to work exclusively in English (including in translation). By exploring literary criticism on modernism in its historical and global contexts, students will gain an understanding of major debates which have shaped modernist studies across the twentieth century including New Criticism, feminist studies, postcolonial studies, as well as more recent debates on the global turn including weak theory and "bad" modernisms. Students will also improve their writing and independent research skills through an anthology project that invites them to contribute to the ongoing canonization of global modernist texts through producing scholarly annotations, introductions, and digital editing. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, LCC, WAC, GLIT, GCHF, GSPE **ISP:** AIS

EGL 266 - Black Women Writers

Course Units: 1.0 This course provides an introduction to the major themes and concerns of twentieth- and twenty-first century African American women writers. We begin in the 18th century and move quickly to the 20th and 21st. We will examine the ways in which black womanhood is characterized through intersecting categories of race, gender, class, sexuality, and empire. We will explore how selected authors wrestle with stereotypical images of African American women, examine the connections between black womanhood, community, and empire, and discuss the benefits and limitations of the concept of "black women's writing." Possible writers include Frances Harper, Maria Stewart, Anne Spencer, Zora Neale Hurston, Gwendolyn Brooks, Toni Morrison, Audre Lorde, Gloria Naylor, Octavia

Butler, and others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM **ISP:** AFR, AMS, GSW

EGL 268 - Staging Black Feminisms

Course Units: 1.0 This course considers the feminist and anti-racist practices of Black female dramatists, placing their plays within their cultural contexts. We will examine the ways in which these works construct Black feminist histories, genealogies, and cultures while challenging racial and sexual hierarchies in both American society and artistic canons. Each week, students will read a landmark dramatic text by a Black female playwright as well as seminal sociological texts and scholarly studies that contextualize the work within broader artistic and social movements. Through discussions, field trips including attendance at theatrical performances and other cultural events, reading responses, and a final presentation based on individual research, students will hone their thinking about the development of Black female voices in American dramatic literature and society. **Cross-Listed:** SOC 209 and ATH 248 **Prerequisite(s):** One 100-level English ourse or a score of 5 on the AP English Language or Literature and Composition test. **CC:** SOCS, HUL, HUM, JCAD, JCHF, JLIT, JSPE **ISP:** AFR, GSW

EGL 269 - New Women around the World

Course Units: 1.0 The idea of the New Woman emerged around the world in the first half of the twentieth century. From Beijing to Berlin, Tokyo to Istanbul, women became visible as chorus girls, urban migrants, starlets, citizens, freedom fighters, consumers, and leisure seekers in new public spaces. This class will examine how literature represented and responded to the global phenomenon of the New Woman, tracing how various national, racial, and colonial contexts gave rise to distinct iterations of the New Woman and examining the linkages among the many geographical and political regions in which she appeared. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** JLIT, JCHF, WAC **ISP:** AFR, AIS, AMS, GSWS

Three more intermediate courses of choice (any course between 200-299):

EGL 200 - Shakespeare to 1600

Course Units: 1.0

Shakespeare's works speak to perennial human concerns (ambition, unrequited love, the conflicts between generations), and he has even been lauded as the "inventor of the human." At the same time, his plays come from a very specific cultural milieu; he was a white man who lived in England from 1564-1616. In this course, we will explore the plays written in the first half of Shakespeare's career, collaborating to appreciate the rhetorical devices of Shakespeare's language and to understand the cultural milieu in which his plays were written. Some of the questions that we will ask include: How do structures of political and familial authority affect the characters' conceptions of their roles and duties? What possibilities do the plays offer for female empowerment? To what extent did Shakespeare's stage, which reached audiences of all classes, challenge contemporary conceptions of inherited nobility at a time of increasing social mobility?
Shakespeare's plays have at their center the question of performance; this makes them very well suited to exploring the multifaceted ways in which human identity is social constructed and socially expressed. In our readings of romantic comedies such as *A Midsummer Night's Dream* and *Much Ado About Nothing*, we will ask how both women and men are constricted by gendered expectations of honor. We will also explore the pernicious association between "fairness" and beauty in Shakespeare's time, discovering how expectations about women's supposed sexual and physical purity worked through references to offensive racial stereotypes about contamination. In our discussion of *The Merchant of Venice*, we will pay particular attention to how the privileging of upper-class, Christian men in the play and the religious othering of Shylock and Jessica contributes to a society in which injustice is hypocritically masked as mercy, and all characters suffer. Our examination of the history plays such as *Henry IV*, Part 1, will attend to the costs of creating an English national identity; in particular, we will explore how racial and gendered othering in these plays

defines what it means to be English in way that privilege some and exclude others. **Cross-Listed:** ATH 256 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, WAC, HUM, JLIT

EGL 201 - Shakespeare after 1600

Course Units: 1.0 In this course we will explore plays written in the second half of Shakespeare's career. We will emphasize Shakespeare's great tragedies-works that retain their ability to astound readers and audiences today-but we'll also explore his later comedies, "problem plays," and tragicomic final works. We will collaborate to appreciate the sounds and meaning of Shakespeare's language, to think about the ways he structures plots and creates vivid characters, to understand the cultural milieu in which his plays were written, to make thematic connections across the plays, and to appreciate the plays as both literature and in performance. Shakespearean drama can be challenging to study, but the rewards are lifelong: revelry in language, a strong grounding in theatrical traditions that remain dominant in our culture, a deeper understanding of the actions and values that motivate human beings in society, and an engagement with dramatic works that continue to be reimagined worldwide. **Cross-Listed:** ATH 257 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, JCHF, JLIT, WAC

EGL 202 - Amazons, Saints and Scholars: Women's Writing in the Middle Ages and Renaissance

Course Units: 1.0 This course explores the medieval and early modern female writers of England and France. We will ask: how did women respond in writing to the male-defined literary traditions and conventions of these eras? The course also provides an introduction to some of the major questions and works of feminist literary criticism, including: Why should we read the works of women? What aesthetic standards should we apply when discussing their works? Is there a difference between "masculine" and "feminine" writing? We will focus on six female writers: Marie de France, Christine de Pizan, Elizabeth Carey, Isabella Whitney, Amelia Lanyer, and Mary Sidney. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 203 - The Age of Heroes

Course Units: 1.0 In 410 the Romans abandoned Britain, withdrawing to the continent just as pagan Germanic raiders began to challenge the island's native Picts and Celts. In 1066 the Duke of Normandy crossed the Channel and kicked a Danish king off the throne of a fully Christianized England. In between these two events lies the matter of this course: the subtle and sophisticated literature, art, and culture of early medieval England. We will explore its evolution and wrestle with thorny questions about the significance and meaning it has been accorded over the centuries. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 204 - Plague, Revolt, Religion, and Nation: The Fourteenth Century

Course Units: 1.0 This course explores English literature as it reflects, shapes, and critiques society from the onset of the Hundred Years' War to the overthrow of Richard II (1337- 1400), a turbulent period that includes the Peasants' Revolt, the Black Plague, the rise of English as the language of literature and government, and the proto-Protestant movement known as Lollardy. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 205 - The Road to Canterbury

Course Units: 1.0 This class will focus on Geoffrey Chaucer's seminal work, *The Canterbury Tales*, as a way to introduce the language, culture, and literature of fourteenth-century England. We'll read selections of the Tales, learning the rudiments of written and spoken Middle English along the way. In addition, students will explore the following topics in relation to Chaucer's work: narrative and story-telling, literary authority, social and class status, gender, racial, religious, and sexual difference, cultural memory, and more. 100-level courses are open to all students. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 206 - Gender in Renaissance Literature

Course Units: 1.0 This course explores English Renaissance texts from a variety of genres with an eye to the gender norms that they both created and critiqued. On the one hand, the early modern period offered very distinct roles for men and women. Men were expected to abide by a code of honor that emphasized bravery and action, while women were expected to be chaste, silent, and obedient. On the other hand, there were countless examples of these norms being challenged. Reading plays, poems, speeches, and conduct manuals, we will consider the complexity of their presentations of gender. **Prerequisite(s):** Any 100 level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT **ISP:** GSWS

EGL 207 - White Columns, White Narratives: Archi[text]ure and Race in the Middle Ages

Course Units: This course will examine the relationship between race, architecture, and literary production in the late medieval period (1000-1500). Students will be introduced to premodern critical race studies (PCRS) through the work of scholars who necessarily examine processes of racialization, architectural practice, and literary production in the medieval period. As a class, we'll use PCRS methods to interrogate medieval archi[text]ural narratives for the ways in which they participate in race-craft. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT, JCHF

EGL 208 - Renaissance Drama

Course Units: 1.0 Shakespeare and Marlowe were the Beatles-Stones, Red Sox-Yankees, everybody else-Kanye of their day: moral opposites and aesthetic rivals, but also mutual inspirations and at times even collaborators. Marlowe was the dynamic bad boy, drawn to dark characters mirroring his own troubled soul; Shakespeare, the reclusive genius, who worked in more subtle ways to delineate human behavior and challenge existing power structures. We'll see how they together created one of the world's most dynamic literary forms, modern English drama, and how that drama, along with the drama of their rivalry, continues to inform our own ideas about art and its cultural power. **Cross-Listed:** ATH **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 210 - British Literature: Seventeenth-Century Literature

Course Units: 1.0 This course will look at seventeenth-century literature and culture through the idea of revenge, which became a dominant form in an age of turmoil, injury, and change. We will begin with the early revenge plays of Shakespeare, Tourneur, Marston, Ford, and Webster, proceed through the cosmic revenge of Satan in *Paradise Lost*, and end with the ironic revenge exacted on moral goodness by the Restoration poets, playwrights, and philosophers. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 211 - Milton

Course Units: 1.0 The two sides of Milton - the high humanist poet, author of the greatest epic in English and one of the greatest religious poems in any language, and the Puritan revolutionary, defender of regicide and champion of the English commonwealth. The goal of the course will be to see if the two sides can be held separate, or if they must be seen as complementary. We will read Paradise Lost at the rate of one book per week, always trying to relate the two sides of the poet. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** REL

EGL 212 - The Restoration

Course Units: 1.0 This course will closely examine the culture that produced both the first official poet laureate of England, John Dryden, and the most notoriously libertine poet in English, the Earl of Rochester. Also appearing will be the first English woman to make a living from literature, Aphra Behn; the wittiest playwrights in English dramatic history (Wycherley, Etherege, Congreve); John Milton; some very early English novels; and some pretty good philosophers, including Thomas Hobbes, John Locke, and maybe even Sir Isaac Newton. All that and the Great Fire of London, outbreaks of the plague, several wars, and major revolutions in politics and science. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 213 - Circum-Atlantic Revolutions

Course Units: 1.0 This course will draw on literary and historical writings and artwork that emerged before, during, and after the three revolutions that ravaged the circum-Atlantic world between 1765 and 1804. We will consider interconnected events leading up to each conflict and the consequences of war on racial, ethnic, gendered, and indigenous groups. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF,JLIT, JSPE **ISP:** AFR, AMS, GSWS

EGL 217 - Enlightenment and Romanticism

Course Units: 1.0 Consideration of the relationships between two major currents in modern European thought and culture: Enlightenment and Romanticism. Authors will range from Descartes to Nietzsche and may include Voltaire, Rousseau, Goethe, and Kant. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 220 - The Romantic Revolution

Course Units: 1.0 The Romantic period was one of Britain's most "revolutionary" eras in a number of important ways. For England, the age was marked by dramatic social, political, literary, and scientific upheaval and change. In this course we will investigate the various causes that were envisioned, promoted, and enacted during this era and trace their often wide-ranging and revolutionary effects. Readings will likely include selections from the following authors: William Wordsworth, Samuel Taylor Coleridge, William Blake, Mary Shelley, Lord Byron, Percy Bysshe Shelley, and John Keats. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, JCHF, JLIT, WAC

EGL 222 - Gendered Ecologies in the Long-Nineteenth Century

Course Units: This course will challenge gendered judgments and standardized principles represented in the masculinized canon of nineteenth-century nature writing and establishes a framework for women writers of the long nineteenth century, who were active contributors to the discourse of natural history. These women writers engaged in critical observations of eco-materiality, analyzed their findings, and encrypted their discoveries of nature in their literary creations. Our course readings will focus on the works of several prominent, trans-Atlantic literary women from the long-nineteenth century whose multi-directional observations of animate and inanimate objects in the

environmental sphere are founded on personal discoveries made while interacting with their surroundings. The aim of this course is to reconsider the place of women as naturalist writers and to foreground the salient contributions of literary women writers to the study of eco-feminism, botany, political ecology, and bio-communal systems. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, ENS, GSWS

EGL 223 - Jane Austen

Course Units: 1.0 Jane Austen has achieved what few other literary authors can boast: membership in "the canon" of "great authors" and an intensely devoted, energetic modern fan base complete with cosplay, fan fiction, pilgrimages, and a never-ending series of visual adaptations. Students will read Jane Austen's work in chronological order, explore some late 18th and early 19th century contexts (biographical, philosophical, literary, cultural, historical), become familiar with some of the central, current, and ongoing scholarly debates about Austen, and discuss the value of, and consider the insights revealed by, some modern adaptations of Austen's work. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 224 - 19th-Century Novel

Course Units: 1.0 This course on the 19th-century novel is an experiment in slow reading. According to David Mikics, "Reading better means reading more slowly. There is a quiet movement afoot on behalf of slowness: slow cooking, slow thinking, and yes, slow reading. In reaction against the breathless pace of our computer-driven world, writers on social trends have begun to extol the virtues of a more meditative, involved approach to many parts of our lives, and reading is no exception" (1). Together, we will spend the term slowly reading and rereading one substantial Victorian novel, focusing on slow reading as both experience and methodology. In addition to the novel, we will read around it: digging into primary and secondary source material to build a complete portrait of the novel itself, the cultural landscape that surrounded it, and its critical and artistic legacy. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 230 - Seduction in Early American Republic

Course Units: 1.0 In her seminal study, *Revolution and the Word*: *The Rise of the Novel in America*, Cathy N. Davidson argues that "literature is not simply words upon a page but a complex social, political, and material process of cultural production" (viii). The eighteenth-century sentimental novel serves to highlight a moment in history lodged among judgments, anxieties and controversies about the direction the newly-formed American Republic would take at the end of the Revolution. Embedded within these narratives are questions about both men's and women's power and authority in the public and private spheres, the negation of the female self, the seductive function of romance and courtship, and the perception of women's bodies as moral, social, and biologic commodities. This course seeks to explore disjunctions between the sentimental structure of the early American novel and its contradictory attitudes toward liberty and self-expression. Through the lens of queer theory, affect theory, and new materialism, students will examine how seduction, homoerotica, and cross-dressing both reinforce and subvert American values and ideals that are distinct from European standards of morality. The readings will also consider how the cult of "true womanhood," prominent during the first few decades of the nineteenth century, suppressed pleas for women's equality. How do the texts under consideration help to define the new nation, its citizens, and boundaries? In what ways do these texts consolidate nationhood through the formation of a national literature and the narrative structure of a national history, culture, and consciousness? Do these novels construct, conserve, or undermine American cultural institutions? **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, GSWS

EGL 231 - Nineteenth-Century American Literature

Course Units: 1.0 This course focuses on the self-conscious development of literary tradition in 19th century America -- its meaning, its implications, its failures -- and its aesthetic and moral possibilities. Writers under consideration may include Emerson, Fuller, Thoreau, Douglass, Hawthorne, Melville, Dickinson, and Twain, and topics will include individualism, transcendentalism, abolition, the coming of war, the aftermath of war, growth, expansion, and power. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 233 - 18-19th Century Early Literature of African Diaspora

Course Units: 1.0 This introductory survey course will trace African American movement towards literary and aesthetic mastery beginning with what Henry Louis Gates calls "oral writing." Readings begin with the first known written poems and progress from slave narratives and autobiography to essays and fiction. Authors include Phillis Wheatley, Harriet Jacobs, Frances Ellen Watkins Harper, Solomon Northup, Charles Chesnutt, W.E.B. Du Bois, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AFR, AMS, GSWS

EGL 236 - Trans-Atlantic Realism and Naturalism

Course Units: 1.0 Realism and naturalism were aesthetic movements that emerged in American fiction between approximately 1865 and 1925. This course examines these two literary movements to show how writers of this era explored the trauma created by war (the Civil War and WWI), the moral consequences of freedom and sexual awareness, rapid urbanization and the Great Northern migration, inconsistencies between wealth and poverty, and innovative discoveries in science and technology. The purpose of this course, then, is to investigate how the authors of this period practiced their art both collectively and individually and the ways in which American social life informed the ideologies of realism and naturalism. Possible writers we will study include William Dean Howells, Stephen Crane, Frank Norris, Theodore Dreiser, Kate Chopin, Mary Wilkins Freeman, Mark Twain, Edith Wharton, Henry James, and Paul Laurence Dunbar. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, GSW

EGL 237 - Reclamation & Renaissance: Black Literary Arts 1900 to 1960, "Dark Like Me - That is my Dream!"

Course Units: 1.0 In this course we will read literatures of African diaspora from the United States and from the English-speaking African Diaspora more broadly speaking, written in the early to mid- 20th century. This course is deliberately using the adjective Black instead of African American to highlight our awareness that the literature of the early 20th century is part of a Pan-African movement. Threads we will follow include: issues of identity (being American; being Black; racial and social passing); miscegenation; claims to culture through literature; political and social change through literature (is it possible?); self-representation and activism through literary arts; rise of pride in being part of African diaspora; gender roles in literary and social contexts. Questions we will raise and explore in the course of the term include: What is the relationship between aesthetic production and political action? What are the gendered aspects of the expressions of the writers and artists? How are "folk" forms incorporated into "literary" forms? How does self-representation operate in the reclamation of a sense of self? We will engage with the complexities of cultural diversities within the African diaspora while we contemplate the traditions we follow. We will begin, as the title of the course suggests, around the turn of the 20th century, when Du Bois writes that the "problem of the twentieth century is the problem of the color line" (Souls of Black Folk 45). We will move through what some called the Harlem Renaissance, during which time writers such as Langston Hughes celebrated being Black in a reclamation of the self: "Dark like me-That is my dream!" (Selected Poems 14). We will explore the literature of the pre- and post- WWII era, ending the term with what was known as the Black Arts Movement. The goal, in terms of content, is to provide you with a broad sampling of literature of the African Diaspora literature of the early 20th century, with a particular focus on literature (prose in the form of essays, short stories, novels; poetry; plays) generated from the United States while also reaching toward its more global pan-Africanist roots. I hope you will follow your interests and curiosities, after the course is over, to explore this literature further. (Also counts for Africana and American Studies). **Prerequisite(s):** One

100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JLIT **ISP:** AFR, AMS

EGL 242 - Experimental Writing Workshop

Course Units: 1 Experimental writing explores language as a medium in unexpected and often surprising ways. This course will focus primarily on poetry, though poetry defined somewhat broadly, including mixed media, visual, and prose poetry. We'll read a variety of experimental texts, using them as launch points for our own experimental writing practices. This generative workshop will focus on the creation of new work using experimental techniques, while learning to engage deeply in reflective reading practices with each other's work. We'll experiment with constraint, computational poetry, hybrid and mixed media poetry, and generally be open to as many processes and approaches as we can. The goals of our workshop time, and our readings, will be to encourage you to develop new modes, skills, and techniques for writing creatively. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD

EGL 243 - The Poetic Object Workshop: Experimental Book Forms

Course Units: This course will explore the intersection between poetry and visual arts as a space for literary artistic production. Through demonstration and assignments students will write poetry and create prints and objects that integrate visual and textual elements. Students will practice combiningstructure, visual, and textual content in meaningful ways. **Cross-Listed:** AVA 353 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test or AVA 150 , or AVA 251 or AVA 252 or instructor's permission

EGL 244 - The Contemporary British Imagination

Course Units: 1.0 This course will examine contemporary British literary works. We will be reading closely, carefully, and critically about gender, sexuality, class, race, love, trauma, narrative, style, history, and more. This course will familiarize students with a sampling of the (often experimental) literature that the global Anglophone world has produced fairly recently; our selections will range from experimental short stories to books-turned-films to so-called "weird fiction," in order to address the following major questions: how does the contemporary British literary imagination develop? And, what, exactly, does it develop into? **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 245 - Experimental Texts

Course Units: 1.0 Experiments in writing have a long history and are often some combination of fascinating, weird, complex, risky, and wild. This course will cross genre-boundaries in order to discover what it means to read, write, and experience "experimental" literature, which usually attempts to challenge the traditions, formal devices, and audience expectations of literary engagement. With a focus on the relationship between form and content as well as attention paid to the limitations associated with strict categorical delineations of literary and cultural objects, we will spend the term analyzing and producing experimental texts. We will spend time considering primarily contemporary textual responses to cultural, social, and political shifts and the ways in which such shifts inform and affect our reading practices. Readings will include poetry fiction, theory, and contemporary media. Writing assignments will include interpretive and creative works. Collaborative projects will also be a part of this course. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC

EGL 247 - Studies in Modern Poets: Bob Dylan and Gary Snyder

Course Units: 1.0 This course is a study in the role of history in the ways that two poets, Bob Dylan and Gary Snyder, conceive of their work. Dylan's fascination with the music and history of America from the run-up to the Civil War

through Reconstruction and the Great Depression, shapes his sense of useful subject matter, his development of the personae that inhabit his lyrics, and his range of rhetoric, from the nostalgic to the prophetic; it also places him squarely within contemporary controversies about the political uses of history. Gary Snyder's understanding that history extends to the natural world and our relationship to it is integral to his complex enterprise as a writer of poems and essays, as an activist and educator, and as a point of connection in a web of similarly concerned thinkers. His conception of history as a matter of bioregions rather than of nations and of tradition as a matter of wisdom rather than of identity unsettles the usual divisions between art, politics and science as well as our conventional expectations of poetry. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD, JLIT **ISP:** AMS, REE

EGL 248 - Introduction to Black Poetry

Course Units: 1.0 We will explore the development of African-American poetic voices in North America. We will look at poems and poets as they constitute a hybrid and composite tradition. We will read poetry in anthologies; we will also read several full books by individual authors, and will listen to performance poetry on CD and DVD. A partial list of poets we will read includes Wheatley, Harper, Dunbar, Hughes, McKay, Helene Johnson, Brooks, Baraka, Clifton, Sanchez, Cortez, Morris, Mullen, Brathwaite, Komunyakaa, Francis, Dungy, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AFR, AMS

EGL 249 - Contemporary Poetry

Course Units: 1.0 In this course, we will take a close look at the work of five poets, three whose lives have spanned the American experience from the 1960s to the present (Peg Boyers, Carl Phillips, Frank Bidart) and two younger poets (Chelsea Woodard and Diane Mehta, both Union graduates). We'll take a look at the problem of the speaker in the poems (who may be the poet, more or less, or a mask, or a fiction, or some combination), which is also a way of asking questions about identity, history, and culture, as well as about freedom and restraint, the possibilities and limitations of language. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 250 - The Beats and Contemporary Culture

Course Units: 1.0 An examination of the writers of the Beat Generation (including Allen Ginsberg, Jack Kerouac, Gary Snyder, Edward Sanders) and of their lasting influence on American popular culture. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, GLIT, GCAD **ISP:** AMS, GSWS, REE

EGL 251 - World Literatures in English

Course Units: 1.0 Besides the USA, Canada, the UK and Ireland, there are dozens of countries where English is commonly spoken and written. From Australia to Zimbabwe, Belize to Nigeria, Jamaica to India, New Zealand to Kenya, literature in English is a world-wide phenomenon. In this course, students will read and analyze English-language poems, short stories, personal essays, and novels from a selection of far-flung countries, to learn about the peoples' cultures, histories, struggles, and achievements. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JLIT, JSPE **ISP:** AFR, REE

EGL 252 - The Islamic World and Global Literary Culture

Course Units: 1

The Islamic World and Global Literary culture course asks how two designations of the global - world literature and the Islamic world - think through the concepts of globalization and community. Using insights drawn from recent literary, sociological, and theological research we will consider the important and dynamic role of religion, specifically Islam, in contributing to cultural identity on a global scale.

Students will engage with literary and theoretical texts that have been produced within, by, and about these communities to explore how authors reckoned with the world community envisioned by Islam and how Islamic authors, both practicing and non-religious, have been received into the global literary sphere. In addition to reading canonical novels, topics covered will include critical and cultural theories related to world literary study such as orientalism, the role of translation, literary prize culture, non-Western feminisms, and minority studies. Students will read a challenging and engaging range of texts, including novels, essays, short stories and travelogues produced by artists engaging with diverse geographic and cultural backgrounds drawn from the Arab World, Turkey, the Indian subcontinent, as well as from diaspora communities in Europe and America. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, LCC, WAC, GLIT, GCHF, GSPE **ISP:** AIS

EGL 253 - Narratives of Haunting in US Ethnic Literature

Course Units: 1.0 This course examines the theme of haunting in contemporary US ethnic literature. With this theme in mind, we will investigate the following questions throughout the trimester: Why is haunting such a prevalent theme in ethnic writing? What do we mean when we say that a text is haunted? What are the causes of haunting? What is possession? What are some ways to dispossess or exorcise ghosts? What are the functions of ghosts? Is there such a thing as a good haunting? What are their messages to us? How do we listen to ghosts? Authors include Lan Cao, Nora Okja Keller, Maxine Hong Kingston, Cynthia Ozick, Toni Morrison, Sandra Cisneros, and Leslie Marmon Silko. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, JCHF, JLIT **ISP:** AMS, GSW

EGL 254 - Discourses on the Viet Nam/American War

Course Units: 1.0 This class will examine various perspectives on "The Vietnam War," or, as the people of Viet Nam call it, "The American War." In our archeological exploration into the nature of knowledge about this period in Viet Nam/U.S. history, we will not privilege one perspective over another. Rather, we will examine the diverse political, ideological, and moral positions from which various groups, such as the U.S. government, U.S. soldiers, U.S. citizens, the North Vietnamese people, and the South Vietnamese people, perceive this historic conflict. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, GCHF, GLIT **ISP:** AIS, AMS

EGL 255 - Asian American Literature and Film

Course Units: 1.0 If you are interested in the diverse history of Asian immigration in the U.S., take this course. Together as a class, we will examine major historical moments in Asian America: the first wave of Asian immigration in the mid-nineteenth century, the anti-Asian laws of the late nineteenth century, the Japanese internment during the Second World War, the emergence of Asian American studies during the 1960s Civil Rights Movement, Southeast Asian refugees after the Viet Nam/American War, and the contemporary turns to the transnational and the pan ethnic. To cover these historical moments, we will read the following texts: Island: Poetry and History of Chinese Immigrants on Angel Island, Eat a Bowl of Tea, Farwell to Manzanar, When Broken Glass Floats, American Born Chinese, and American Son. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AIS, AMS, FLM

EGL 256 - Southeast Asian-American Experience

Course Units: 1.0 This course examines the diverse literatures, histories, and cultures of the Vietnamese, Cambodian, Hmong and Laotian through the lens of war, migration, and return. Specific attention will be paid to how the War in

Vietnam spread to neighboring countries such as Cambodia and Laos, resulting in mass migration of people from Southeast Asia to the West, specifically the United States. We will examine the literatures, oral testimonies, films, and music created by Southeast Asians in America. Possible authors include: Andrew Lam, Bich Minh Nguyen, Le Thi Diem Thuy, Loung Ung, Chanrithy Him, Kao Kalia Yang, Mai Neng Moua, and Burlee Vang. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC **ISP:** AIS, AMS

EGL 257 - Irish American Literature: Race, Gender, Sexuality

Course Units: 1.0 **(Fall: Bracken)** This course will provide an introduction to Irish American literature from the 19th century to the present day, looking at a number of issues. Specific attention will be paid to constructions of race, gender, and sexuality and the texts examine here will be explored with questions relation to these in mind. Throughout the course, we will consider race relations in 19th and 20th century US culture, new scholarship on the Black and Green Atlantic and trace the problematics of Irish America's (self) construction of whiteness. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUM, HUL, WAC **ISP:** GSW

EGL 258 - Changing Ireland

Course Units: 1.0 This course will be looking at the changing nature of Irish society since the economic boom of Celtic Tiger Ireland in the 1990's. EU membership, US investment and the effects of global internationalism have brought about radical culture transformations in the country which in turn are altering conventional meanings of Irishness and Irish identity. We will be looking at representations of this changing Ireland in literature and film, paying attention to issues such as new technologies, post-feminism, sexualities, race and ethnicity. Texts will include Martin McDonagh's *In Bruges*, Anne Enright's novel *The Wig My Father Wore*, and the poetry of Leanne O'Sullivan. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM **ISP:** FLM, GSWS

EGL 259 - Irish Literature and Film

Course Units: 1.0 The aim of this course is to introduce you to the field of Irish Studies, examining how issues relating to language, identity and nationhood are intimately connected in Irish literature and film. In this course we will be studying Irish literary texts from the beginning of the 19th century to the late 20th century, examined alongside a selection of contemporary films. This course will ask you to consider the ways in which cultural concerns of the Irish past continue to haunt the landscape of the present day, paying attention to issues of gender, class, race and sexuality. Texts will include Lady Morgan's *Wild Irish Girl*, Bram Stoker's *Dracula*, Samuel Beckett's *Waiting for Godot* and Neil Jordan's film *Michael Collins*. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, LCC, HUM **ISP:** FLM, GSWS

EGL 260 - James Joyce

Course Units: 1.0 This course will focus entirely on Irish writer James Joyce's modernist masterpiece *Ulysses*, published in 1922. This is a complex, challenging and experimental novel (900 pages), which uses stream of consciousness as its primary literary mode. Set on just one day, June 16th 1904, it tells the story of Leopold Bloom, Stephen Dedalus, and Molly Bloom as we learn of their pasts, presents and hopes for the future. Joyce's novel is a meditation on the lives of these characters, and the modern colonial Dublin they inhabit, however it is also a self-reflective piece of literature which foregrounds issues relating to language, style, and storytelling. In the course, we will successively read all of the chapters of *Ulysses*, analyzing it through a variety of critical paradigms, including post-colonialism, modernism, and feminism. We will also watch a number of films relating to Joyce and his work, such as Nora, Bloom, and Ulysses, and at the end of the course we will consider the commodification of Joyce as the 'Great Irish Writer' through the yearly Bloomsday celebrations of June 16th in Dublin. Students are encouraged to read Joyce's

Dubliners and *A Portrait of the Artist as a Young Man* before the class begins. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM

EGL 261 - Modernism and Modernity

Course Units: 1.0 This course examines British fiction from the early twentieth-century, a period often referred to as the "modernist" era. The moderns experimented with new, different, and exciting ways of writing that perplexed many readers, yet such changes have come to be seen as important innovations in literary style. In addition to engaging with questions of form and style, the moderns were also interested in subjects that were previously viewed as taboo, questionable, and, as such, often unspeakable. These topics included trauma, the lasting effects of war, sexual experimentation, adultery, insanity, and newly carved out gender and familial roles. Throughout our term together, we will critically consider, discuss, and write about the dynamic between the content of modernist writing and its innovative style and form. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** GSWS

EGL 262 - Global Modernisms

Course Units: 1.0

While traditionally modernism has been considered a largely European and North American affair, in recent years scholars have sought to contest and expand this canon. New research has shown that modernism existed all over the world, from Africa and Latin America, to the South Pacific and East Asia, and on all continents in between. This course introduces students to a new globally expanded understanding of modernism, while asking them to actively contribute to the ongoing expansion of the canon. We will work with new scholarship and archival materials, in order to better understand what happens to modernism as it spreads around the world.
Writers may include African writers such as Léopold Sédar Senghor, and Wole Soyinka; Caribbean writers Claude McKay and Aimé Césaire; Japanese poets, Hirato Renkichi and Chika Sagawa; Chinese writers such as Lu Xun and Eileen Zhang; Indian writers from Tagore and the Indian Progressive Writers Association to the 1960s avant-gardes; and Turkish modernists including Ahmet Hamdi Tanpınar and the Garip poets.

Students will have the opportunity to work with texts in any languages they may read, or to work exclusively in English (including in translation). By exploring literary criticism on modernism in its historical and global contexts, students will gain an understanding of major debates which have shaped modernist studies across the twentieth century including New Criticism, feminist studies, postcolonial studies, as well as more recent debates on the global turn including weak theory and "bad" modernisms. Students will also improve their writing and independent research skills through an anthology project that invites them to contribute to the ongoing canonization of global modernist texts through producing scholarly annotations, introductions, and digital editing. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, LCC, WAC, GLIT, GCHF, GSPE **ISP:** AIS

EGL 263 - Literature and Sexuality

Course Units: 1.0 By examining literary and cultural representations, this course both interrogates the politics and social dynamics of various sexual identities and subjectivities and examines complex representations of both gender and sexuality. This course also focuses on the literary study of important straight, gay, lesbian, queer, bisexual, and transgender writers within their evolving social, historical, and cultural contexts over the last few centuries. We will discuss some of the major critical debates both in literary studies and in gender and sexuality studies, asking and attempting to answer the following questions: How is sexuality represented in literature? How has the relationship between literature and sexuality evolved over time? Who creates the discourses on sexualized bodies and identities? How can we understand the relationship between lived experience and literary/cultural representations? What might be queer about literature? What makes a narrative queer? **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** GSW

EGL 266 - Black Women Writers

Course Units: 1.0 This course provides an introduction to the major themes and concerns of twentieth- and twenty-first century African American women writers. We begin in the 18th century and move quickly to the 20th and 21st. We will examine the ways in which black womanhood is characterized through intersecting categories of race, gender, class, sexuality, and empire. We will explore how selected authors wrestle with stereotypical images of African American women, examine the connections between black womanhood, community, and empire, and discuss the benefits and limitations of the concept of "black women's writing." Possible writers include Frances Harper, Maria Stewart, Anne Spencer, Zora Neale Hurston, Gwendolyn Brooks, Toni Morrison, Audre Lorde, Gloria Naylor, Octavia Butler, and others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM **ISP:** AFR, AMS, GSW

EGL 267 - The Virginia Woolf

Course Units: 1 Virginia Woolf is, quite frankly, one of the most significant writers transnationally and transhistorically. Aside from her acclaimed, now often canonical novels, Woolf wrote short stories and essays; indeed, her letters and diaries, in addition, have become a core part of modernist literary history. This class examines Woolf and much, though notably not all, of her work within their social, cultural, and historical contexts. By tracing the evolution of Woolf's work, we will interrogate her stylistic innovations, shifting political ideologies, remarkable social circles, and complex life. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUM, HUL, WAC **ISP:** GSW

EGL 268 - Staging Black Feminisms

Course Units: 1.0 This course considers the feminist and anti-racist practices of Black female dramatists, placing their plays within their cultural contexts. We will examine the ways in which these works construct Black feminist histories, genealogies, and cultures while challenging racial and sexual hierarchies in both American society and artistic canons. Each week, students will read a landmark dramatic text by a Black female playwright as well as seminal sociological texts and scholarly studies that contextualize the work within broader artistic and social movements. Through discussions, field trips including attendance at theatrical performances and other cultural events, reading responses, and a final presentation based on individual research, students will hone their thinking about the development of Black female voices in American dramatic literature and society. **Cross-Listed:** SOC 209 and ATH 248 **Prerequisite(s):** One 100-level English ourse or a score of 5 on the AP English Language or Literature and Composition test. **CC:** SOCS, HUL, HUM, JCAD, JCHF, JLIT, JSPE **ISP:** AFR, GSW

EGL 269 - New Women around the World

Course Units: 1.0 The idea of the New Woman emerged around the world in the first half of the twentieth century. From Beijing to Berlin, Tokyo to Istanbul, women became visible as chorus girls, urban migrants, starlets, citizens, freedom fighters, consumers, and leisure seekers in new public spaces. This class will examine how literature represented and responded to the global phenomenon of the New Woman, tracing how various national, racial, and colonial contexts gave rise to distinct iterations of the New Woman and examining the linkages among the many geographical and political regions in which she appeared. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** JLIT, JCHF, WAC **ISP:** AFR, AIS, AMS, GSWS

EGL 270 - Imagining the Nation(s): Ireland/India

Course Units: 1.0 This course will explore the colonial and postcolonial literary histories of India and Ireland, exploring the decolonizing energies of both countries' key writers. A comparative class, we will analyze three important moments in Ireland and India's literary histories, focusing on the colonial, postcolonial, and globalized periods.

Beginning with the colonial, the class will study the late 19th and early 20th century era, focusing on the writers Rabindranath Tagore and W.B. Yeats, both Nobel literature prize winners, modernist innovators, and decolonial activists for independence in their respective countries. Following this, we will move into the mid to late 20th century postcolonial periods of India and Ireland, specifically reading the work of Edna O'Brien and Arundhati Roy. Their work (and its reception) exposes many of the colonial legacies in post-independence, as well as its contradictions and gendered and religious repressions. Lastly, the course will consider the work of two contemporary 21st century writers, Sally Rooney and Meena Kandasamy, exploring zones of connection between globalization, colonial histories, gender and sexuality. **Prerequisite(s):** EGL 100 or EGL 101 or EGL 102 or a grade of 5 on the AP English Literature or Language test. **CC:** HUL, HUM, WAC-R **ISP:** GSWS

EGL 271 - Dark Deeds: Crime in the Adirondacks

Course Units: 1.0 Merriam Webster defines a crime as an illegal act for which someone can be punished by the government; especially: a gross violation of law. A crime, however, is also defined in moral and ethical terms, as a grave offense, especially against morality; something reprehensible, foolish, or disgraceful. Students in this course will explore a variety of literary and historical illustrations of each of these types of crimes as they have occurred in the Adirondack Mountains throughout history. As we investigate various illegal acts in the Adirondacks, we will also examine underlying moral crimes, such as poverty and economic depression, which have the potential to lead individuals toward a life of crime. We will explore Chester Gillette's 1906 murder of Grace Brown at Big Moose Lake and the highly sensationalized murder trial that ensued, alongside Theodore Dreiser's 1925 novel that was based on the murder and criminal case. We will analyze the prison system in the Adirondacks, and we'll investigate various mobsters who stayed in Saratoga Springs during the Prohibition Era. We will also explore the crime of contagion as we read works written about tuberculosis and various sanatoriums in Saranac Lake. Part of our class time will be held at the Kelly Adirondack Center (KAC), working in the Adirondack Research Library. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, ENS, LAW

EGL 272 - Indigenous Sovereignty: Indigiqueer and Two-Spirit Voices

Course Units: 1.0 Students will consider literary works from several Native American writers who challenge white privilege and modes of possession. Texts will support place consciousness and tribal revitalization through an intergenerational awareness of intercultural dialogue. The course will focus on Indigenous counter-narratives that endeavor to dislodge the dominance of canonical white writers and, using a queer theoretical lens, will explore ways to reframe binary heteronormative practices.Course readings will focus on the consequences of dualistic thinking, colonization, and Eurocentric ideals. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **ISP:** ENS

EGL 273 - Disability, Literature, and Society

Course Units: 1

Through close reading and analysis of literary and cultural representations of disability, this course provides an introduction to the interdisciplinary field of disability studies. We will take the social model perspective that the experience of a disability is shaped less by physical or intellectual difference than by social attitudes and material barriers to access as a point of departure. All of the texts we will discuss this term represent disability in one way or another, some more centrally than others. On the one hand, we will catalogue the ways that literary texts create and disseminate damaging cultural narratives about disabled individuals. On the other, we will consider how various artistic works can resist dominant cultural representations of disability and challenge deep-seated ideals of physical and cognitive normalcy. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test.
CC: JLIT, WAC

EGL 274 - Uncanny Texts: Literature and Psychoanalysis

Course Units: 1.0 By interrogating literary, cultural, and psychoanalytical texts, this course examines the relationship between literature and psychoanalysis; the two have been in close conversation since the early theoretical developments that began to define psychoanalysis. From Freud's use of Hamlet and The Sandman as key cornerstones of his own theories to the way that J.K. Rowling's Harry Potter and the Sorcerer's Stone illustrates Jacques Lacan's notion of the Mirror Stage, literature and psychoanalysis have been dialogically and dynamically intimate bedfellows. During our term, we will look at psychoanalytical writings by Sigmund Freud, Jacques Lacan, and others in conjunction with transhistorical literary and cultural texts. We will examine specific psychoanalytical concepts like the unconscious, desire, sublimation, shame, the uncanny, the death drive, the primal horde, infantile sexuality, and mourning and melancholia. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** GSWS

EGL 275 - Autobiography

Course Units: 1.0 This course explores the development of the autobiographical genre from the late 18th century to the present day, beginning with Jean-Jacques Rousseau's *Confessions*. Through a combination of close reading, historical contextualization, and critical analysis, we will engage with key texts that have shaped the autobiographical form. Readings will focus on the interplay of memory, truth, and storytelling, as well as the ethical dimensions of self-representation. We will also explore the ways authors shape their life stories to reveal complex identities, cultural contexts, and historical moments. Reading lists vary widely from term to term. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 276 - Literature of the Manor House

Course Units: 1.0 In this course we will investigate the rich and complex history of the genre of English manor house fiction. Focusing on texts ranging from Jane Austen's *Northanger Abbey* and E. M. Forster's *Howards End* to Kazuo Ishiguro's *The Remains of the Day*, Sarah Waters' *The Little Stranger*, and Ian McEwan's *Atonement*, we will explore issues of gender, sexuality, race, and especially class in both course readings and class discussions. Furthermore, we'll examine a number of filmic representations of British country house life, including Robert Altman's *Gosford Park* and Julian Fellowes' *Downton Abbey*. In addition to crafting course papers, students will have the option to research, create, and showcase their own multi-media projects exploring virtual manor homes via a range of freely downloadable programs and platforms. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD, JLIT **ISP:** GSW, STS

EGL 277 - Philosophical Fiction

Course Units: 1.0 This course will deal with works of fiction in which philosophy or philosophical concepts play a significant role. A key issue is the relationship between ideas and (literary) form. Authors will come from a wide range of traditions and may include Descartes, Rousseau, Wordsworth, Nietzsche, Camus, Dostoevsky, Borges, Calvino, Lem, and Le Guin. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** REE

EGL 279 - Literature and Science

Course Units: 1.0 An interdisciplinary examination of the interactions between literature and science. Topics will vary from year to year and may include science writing, the representation of science and scientists in literature, literature inspired by science, literature and science as competing ways of knowing the world, the figurative dimension of scientific writing, and speculative fiction. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, STS

EGL 280 - Nature and Environmental Writing

Course Units: 1.0 This course will focus on the traditions of nature and environmental writing in the American context, with an emphasis on the social and cultural dynamics of the environment and environmental action. Among other questions, we will ask ourselves: How do class, gender, and race enter into the nexus of social interactions that shape our environment? What is the place of literature in community, literacy, and environmental activism? What are the connections between the ways we speak and write about the environment and our actions toward the environment? How does the wilderness concept affect the ways citizens have access to public spaces? We will consider the concept of "nature" as we move through the course, culminating (if you like) with some nature writing of your own. Readings may include Thoreau; Carson; Leopold; Kingsolver, and selections from *Reading the Roots: American Nature Writing Before Walden*; *Colors of Nature*; Lauret Savoy, T*race: Memory, History, and the American Landscape*; and F. Marina Schauffler, *Turning to Earth: Stories of Ecological Conversion.* **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, ENS, STS

EGL 281 - Environmental Psychology and the American Literary Landscape

Course Units: 1.0 Environmental research psychologist Maria Vittoria Giuliani emphasizes that human-to-place attachments "not only permeate our daily life but very often appear also in the representations, idealizations and expressions of life and affect represented [in] literature." Indeed, many literary works emphasize humanity's basic attachment needs and the importance person-to-place bonds have in the development of the human psyche. American fiction writers frequently employ descriptions of American landscapes as inspiration for character and plot development, and American nature writers often emphasize the way in which wilderness environments may influence one's mental and physical health and emotional well-being. In fact, recent studies in the field of cognitive neuroscience provide empirical evidence to substantiate the theory that exposure to a natural environment may actually generate structural changes in the brain by increasing oxygenation and blood flow that occur in response to neural activity. Hence, this course will employ contemporary studies in place attachment, environmental psychology, and cognitive neuroscience to examine the way in which various literary works illustrate the important role environment plays in aiding or obstructing one's ability to think, reason, remember, problem-solve, process information, use language, or be creative. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, ENS

EGL 282 - The Theory of Things: Objects, Emotions, Ideas

Course Units: 1.0 Everybody wants things, needs things, likes things, loves things! Things drive economies, incite wars, save lives; things help us communicate, work, play, move, talk, not talk, and so much more. The theory of things derives from humanity's interest in material culture studies and the connections that can be made between people and physical objects. But there is so much more to consider when discussing 'things,' such as those things that are not physical objects-love, hate, desire, thoughts, feelings, moods, pain, concepts, ideas, and words, just to name a few. In this course, students will discuss both material and immaterial 'things' and in particular how 'things' affect people, predominantly marginalized individuals and groups. *Course developed with support from the Byron A. Nichols Fellowship for Faculty Development. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT, JCHF, JSPE **ISP:** GSW

EGL 283 - Pilgrims, Flâneurs, & Pranksters: The Walk in Literature

Course Units: 1.0 From the poems of William Wordsworth to contemporary novels such as Teju Cole's *Open City,* literary narratives often feature journeys taken on foot. Among other things, a walk, in literature, can structure plot, serve as metaphor, or anchor a stream-of-consciousness narrative within a physical setting. A walker, like a reader, is a consumer of sights. But she is also a producer of thoughts, words, and creative pathways through the world. In this course we will investigate the relationships between walking, thinking, reading, and writing, considering the ways we move through spaces (natural, urban, public, solitary) and the forces and questions that shape our experiences in those

spaces. Our texts will include standard novels and essays, as well as work by walking artists like Richard Long, audio-video artist Janet Cardiff, and street artists, for whom the world is the page and the walker is the reader. You will write traditional academic papers, but we will also walk, and some assignments will encourage you to create walking texts of your own. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT

EGL 284 - Interactive Fiction Workshop

Course Units: 1 Interactive fiction is storytelling that uses technology to create an interactive "reading" experience, requiring the reader to make choices that influence the plot. In this course you are going to read, critique, and create interactive fiction. You'll develop your storytelling skills, and along the way you'll learn some programming concepts, and history of narrative. video games. We'll also consider how race, gender, class, sexuality, and (dis)ability shape our experiences of these games as players and writers. No previous CS experience is necessary. Students will need access to a laptop for class. **Cross-Listed:** CSC 084 **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of instructors. **CC:** HUL, HUM, SET, WAC, JCAD, JETS, JLIT **ISP:** AMS, GSW, STS

EGL 285 - Nabokov

Course Units: 1 Vladimir Nabokov was a language genius, expatriate, chess master, butterfly biologist, and one of the best literary stylist in English. His famous (and infamous) novel *Lolita* has been scandalous ever since its publication in 1955. His texts have inspired movies, passionate discussions, and a polyglot global following. In this class, we will read several of Nabokov's novels, short stories, and his autobiography. We will watch movies based on his books. If you love serious reading and discussion, if you enjoy History, if you want to expand both our mind and your vocabulary, this course is for you. **Cross-Listed:** MLT 266 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** REE

EGL 286 - Transnational Literature, Film, and Theory

Course Units: 1.0 While modern colonialism dating back to the 18th century brought the entire globe into contact, the nation-state remained the relevant unit of culture. Unprecedented levels of migration and technological development in the past century, however, have made it impossible to ignore the fact that we are now living in a thoroughly transnational world-a new world order whose contours we yet barely grasp. How do social identity formations shift when nation-state boundaries are challenged? What sorts of new ethical dilemmas and self-other relations are engendered? Is anti-colonialism, staged as it was in the theater of national liberation, de-fanged or enabled by transnationalism? What new aesthetic forms and modes are generated by transnationalism; and how do cosmopolitans, exiles, diasporics, hybrids, and long-distance nationalists affect the field of culture? These are among the questions we will examine over the course of the term through the complementary lenses of film, literature, and theory. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of instructor. **CC:** HUL, HUM, WAC **ISP:** FLM

EGL 287 - Gender and Sexuality in Film

Course Units: 1.0 This course examines the intersecting roles played by gender and sexuality in our media, with particular emphasis placed on film and video. Over the course of the semester, we will investigate the ways in which various media texts transmit and construct gender and sexuality and how viewers interpret and integrate these representations into their daily lives. As we analyze films by such directors as Alfred Hitchcock, Douglas Sirk, Julie Dash, Trinh T. Minh-ha, and Jonathan Caouette we will explore the ways in which conceptions of gender and sexuality are facilitated and constrained by legal, medical, and ethical discourses that emerge from specific historical and geographic contexts. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of instructor. **CC:** HUM, WAC **ISP:** FLM, GSW

EGL 288 - Film as Fictive Art

Course Units: 1.0 What exactly does the designation "indie" mean when both filmmakers who disseminate their work online and specialized divisions within Hollywood studios claim this term as their own? In this course we will trace the development of the independent cinema from the late 1960s when first-time directors challenged Hollywood norms to create the New American Cinema, through its heyday the 1990s, into the present era-where many argue it has become thoroughly institutionalized. In examining the enormously flexible characterization "independent" we will draw on of a variety of code systems (cultural, artistic, narrative, cinematic, and intertextual) to analyze the work of such directors as George Romero, Julie Dash, Todd Haynes, Mira Nair, Jim Jarmusch, Spike Lee, and Kelly Reichardt. **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC, GCAD, GLIT, GSPE **ISP:** AMS, FLM

EGL 289 - The Essay Film Workshop

Course Units: 1.0 Deriving its meaning from the French *essayer*: to try; to attempt, the essay film is an experiment in form and expression. Weaving together elements of fiction and documentary, the essay film foregrounds the subjectivity of the filmmaker and engages the viewer as participant and collaborator. Relying heavily on montage, the essay film often employs found footage as well as cinema verité techniques-where the camera acts as quasi-therapist, eliciting new performances and confessions. In an approach combining theory and practice, we will explore the many aspects of the essay film genre. Foundational readings by Michel de Montaigne, Georg Lukács, and Phillip Lopate will be paired with visual essay by Issac Julian, Chantal Akerman, Mona Hatoum, and Marlon Riggs among others. Experimenting with form and method, students will produce weekly writings and visual exercises and an extended essay film. **Cross-Listed:** FLM 289 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, FLM

EGL 290 - Studies in Film Genre/Style: Film Noir

Course Units: 1.0

Over the course of the term, we will analyze the history and aesthetics of genre categories and their revisions with respect to specific codes and characteristics, audience expectations, technological developments, and publicity practices. In our investigation of the question of genre, we will engage such key concepts in film theory as authorship, narrative, mise-en-scène, suture, spectatorship, and the gaze. As we seek to understand why genres gain popularity in certain historical moments and the ways in which genres are revised, we will employ a variety of critical tools, drawn from genre theory, critical race studies, environmental studies, and theories of gender and sexuality. Finally, we will ask whether genre studies as a critical approach is keeping pace with the many new developments shaping cinematic form.

Film Noir

This term, our investigation of genre will focus specifically on film noir. We will study the genre's emergence from German Expressionism, pre-code gangster movies, screwball comedy, and hard-boiled detective fiction and consider the historical factors that led to the burgeoning of film noir in the 1940s and 50s. In addition to the standard characters (detective, femme fatal, gangsters, "deviants"), we will analyze filmic styles (low-key lighting, voice-over narration, etc.) and themes of alienation, corruption and existential drift that characterize the genre. From its origins in post-World War II America, we will explore film noir's radical revisions and geographic relocations as it is taken up in such places as France, Hong Kong, Korea, and Mexico. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUM, WAC, JLIT, JSPE **ISP:** AMS, FLM

EGL 291 - From the Drama Desk: Performance, Culture & Creativity Drama Criticism Workshop

Course Units: 1.0 This is an intensive and practical course on reading and writing dramatic criticism. A look at the concepts and practices of theater criticism in American Theater begins with a discussion of major theories of Western drama, from Aristotle to Artaud. Through the reading and discussion of contemporary examples of dramatic criticism and directed studies in techniques of journalistic writing students will gain an understanding of the nature and function of a theater review and an ability to critically view theater productions. Writing will include research essays, response papers and critical reviews of play scripts as well as performances on campus and at professional theaters. **Cross-Listed:** ATH 240 **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUM, LCC, WAC, JCAD, JCHF, JLIT, JSPE

EGL 292 - Contemporary American Theater and Drama

Course Units: 1.0 This course examines trends and notable works visible today in the American theater. We will read plays that have had major successes on Broadway and American regional theaters, as well as study avant-garde works and theatrical and performance artists engaging with new forms and techniques in order to transform theatrical performance in our culture today. Through class discussions and assignments including student presentations, seeing professional theatrical performances, research projects, and critical essays, students will develop their ability to engage critically with theatrical art and artists of our present moment. **Cross-Listed:** ATH **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUM, WAC, JCAD, JCHF, JLIT **ISP:** AMS, GSW

EGL 293 - Workshop in Poetry

Course Units: 1.0 This is a course for students with a serious interest in writing poetry. Classes will be divided between discussions of literary technique, workshop critiques of student writing, and consideration of the work of several contemporary poets. Students will prepare a final portfolio of ten to fifteen pages. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC **ISP:** AMS

EGL 294 - Workshop in Fiction

Course Units: 1.0 This is a course for students with a serious interest in writing fiction and imaginative prose. We'll read and discuss plenty of contemporary fiction, with a particular focus on the short story, considering each piece from a writer's perspective: How is it put together? What makes it unique and interesting? How and what can we learn or steal from it for our own writing? Students will put into practice what we discover in our reading, developing skills at building characters, exploring narrative form, and honing their use of image and voice. Students will complete and revise a variety of exercises and creative pieces, including three short stories. Much of class time will be devoted to workshop discussion of student stories. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC

EGL 295 - Workshop in Creative Non-Fiction

Course Units: 1.0 In this workshop in creative nonfiction, students write personal stories and investigate the personal as an artistic space for deep reflection, healing, empowerment, and playfulness. We study CNF pieces written by both established practitioners of the genre and fellow students. Ultimately, we explore the fraught boundary between fiction and nonfiction and examine the implications in Dickinson's advice: 'Tell all the truth but tell it slant.' **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of instructor. **CC:** HUL, HUM, WAC

EGL 296 - Screenwriting Workshop

Course Units: 1.0 This course is designed to introduce student to the art and craft of screenwriting. In addition, to screenplay format, we will investigate character development, structure, narrative style, dialogue, and techniques of visual storytelling. Screenings, screenplay analysis, outside reading, in-class discussion, as well as guest lectures will broaden students' understanding of the screenwriting process. By the end of the term, students will have completed several short scenes and one short screenplay. **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Compositon test, or permission of the instructor. For Film studies students, EGL 150 is recommended. **CC:** HUM, WAC, JLIT, JCAD **ISP:** AMS, FLM

EGL 296H - English Honors Independent Project 2

Course Units: 1.0 **Prerequisite(s):** EGL 295H **CC:** HUL, HUM

EGL 297 - Literary Research Practicum 1

Course Units: 0.0 **(TBD: Staff)** The English research practicum is designed to allow students to engage in advanced literary research during their undergraduate careers. Students will work on the research project of a faculty member, under that faculty member's direction. This course requires advance permission of the instructor, who sets the course requirements. To receive Pass/Fail credit equivalent to one course, the student must earn passing grades for three terms of the practicum experience. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test.

EGL 298 - Literary Research Practicum 2

Course Units: 0.0 **(TBD: Staff)** The English research practicum is designed to allow students to engage in advanced literary research during their undergraduate careers. Students will work on the research project of a faculty member, under that faculty member's direction. This course requires advance permission of the instructor, who sets the course requirements. To receive Pass/Fail credit equivalent to one course, the student must earn passing grades for three terms of the practicum experience. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test.

EGL 299 - Literary Research Practicum 3

Course Units: 0.0 The English research practicum is designed to allow students to engage in advanced literary research during their undergraduate careers. Students will work on the research project of a faculty member, under that faculty member's direction. This course requires advance permission of the instructor, who sets the course requirements. To receive Pass/Fail credit equivalent to one course, the student must earn passing grades for three terms of the practicum experience. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test.

Three Advanced Courses:

Advanced courses, Junior and Senior Seminars, are writing intensive and research oriented. Majors must complete three advanced courses, including one Junior (preferably a WAC-R) and one Senior Seminar (a WS), and a third seminar of choice. Students must take an Introductory-level course (unless exempt) and at least two 200-level courses before enrolling in a Junior Seminar. Students must take an Introductory-level course (unless exempt), "Confronting the Canon" (190-99), and at least four 200-level courses before enrolling in a Senior Seminar. Students are strongly advised to take one Junior Seminar before enrolling in a Senior Seminar.

Junior Seminars (topics change each year, 300-)

EGL 300 - Jr. Seminar: Poetry Workshop

Course Units: 1.0 A workshop course for students with some experience and a serious interest in the writing of poetry. **Prerequisite(s):** It is strongly recommended, although not required, that students have already taken EGL 293 . One 100-level and two 200-level English courses or instructor's permission. **CC:** HUL, HUM, WAC

EGL 301 - Jr. Seminar: Fiction Workshop: Writing Activist Fiction

Course Units: 1.0 In this intermediate-level fiction workshop, students will build skills in fiction writing and critiquing fiction, compile a portfolio of short stories, and gain insight to the landscape of contemporary creative writing. Our primary focus will be on student writing. Reading assignments will contribute to understanding contemporary fiction writing, with special attention on the short story and the craft of writing, from idea generation through revision. Some sections of this course will focus on a particular skill or aspect of the fiction writer's craft, such as writing dialogue, using research to write better fiction, or developing complex characters. Other sections will focus on a particular theme or subgenre such as the contemporary ghost story, activist fiction, autofiction, climate fiction, or historical fiction. Contact the instructor or the English Department for details on particular sections. **Prerequisite(s):** It is strongly recommended that students have already taken EGL 294. One 100-level and two 200-level English courses or instructor's permission. Previous workshop experience is recommended. **CC:** HUL, WAC, HUM

EGL 302 - Jr. Seminar: Literary Theory (Winter)

Course Units: 1.0 Reading involves more than just the reader and the text; when we read, our cultural and personal experiences inform our reading. This course considers different critical approaches to literature-from the history of English as a discipline onward - in an attempt to help contextualize reading practices. We will read primary critical texts, primary literary texts, and examples of literary criticism. We will discuss various schools of literary criticism, including (but not limited to) Structuralism, Post-structuralism, Marxism, Psychoanalysis, Feminism, Queer Theory, Disability Studies, Postcolonial Theory, and Critical Race Theory. By the end of the semester, students will be able to use appropriate terminology, produce critically informed readings, and speak authoritatively about different critical approaches to literature. This course prepares majors and ID majors to apply to write Honors theses. **Prerequisite(s):** It is strongly recommended that petitioning students have GPA's of 3.3 or above. One 100-level and two 200-level English courses. **CC:** HUL, HUM, WAC, WAC-R **ISP:** GSW

EGL 304 - Jr. Seminar (Fall):

Course Units: 1.0 **Prerequisite(s):** One 100-level and two 200-level English courses or instructor's permission. **CC:** HUL, HUM, WAC

EGL 305 - Jr. Seminar (Winter): Global Ulysses

Course Units: 1.0 When James Joyce's novel *Ulysses* was published in 1922, critics praised it as a text which created new literary forms leading to a radical shift in the understanding of what literature was able to say and do. The advent of *Ulysses* is considered a watershed moment in the history of Anglophone literature and the novel is often hailed as the most important book of the 20th century. Yet, the text's publication also created a huge uproar for authors of fiction from around the globe. Joyce's ambitions to encompass and record, in a single text, all of Irish culture and minute details of the city of Dublin, inspired other authors to search for ways in which their own national culture could be summed up in a single text. In this seminar we will explore authors who have taken up the challenge to write a "*Ulysses* of their Own," using the formal experiments of Joyce's novel as a springboard to reflect on their own national literary traditions in the face of a rapidly changing and unevenly experienced modernity. We will read texts such as Alfred Döblin's *Berlin Alexanderplatz* (Germany); Yasunari Kawabata's *The Scarlet Gang of Asakusa* (Japan); GV Desani's *All About H. Hatterr* (India); Ahmet Hamdi Tanpınar's *A Mind at Peace* (Turkey); and Derek Walcott's *Omeros* (Saint Lucia). The seminar will introduce students to theoretical concepts integral to the study of

Joyce's novel and its global reception such as multiple modernities, global modernisms, postcolonialism, encyclopedic form, translation and reception theory. **CC:** HUL, HUM, WAC-R

EGL 306 - Jr. Seminar (Spring): The Beatles, Motown, and Taylor Swift

Course Units: 1.0 This is a course on the cultural politics of popular music. Since pop music is, by definition, ephemeral - shaped by and to some degree shaping the attitudes of a particular time and place - it can offer insights into what those attitudes were. On the contrary, some pop music transcends its cultural milieu, thus revealing something deeper about our culture in general. The Beatles, the most influential and still the most popular band of the rock era, offer one example; the musicians of Motown and other predominantly African-American recording platforms like Stax-Volt, without whom there would be no Beatles, offer another. After examining the lasting contributions of these artists as a foundation, we will, in the last weeks of the term, look at more contemporary pop musicians and their impact. Taylor Swift will be the focus, but students may nominate their own candidates (Beyonce? Rihanna? The Replacements?) for pop immortality and impact as well. **Prerequisite(s):** One 100-level and two 200-level English courses or instructor's permission. **CC:** HUL, HUM, WAC-R **Note:** No musical knowledge is required for this course. An ability to keep time and notice stand-out musical elements (key modulations, odd or interesting chords) would be useful but is not required. If you can play a bit, though, feel free to do so.

Senior Seminars (topics change each year):

EGL 400 - Sr. Seminar: Advanced Poetry Workshop

Course Units: 1.0 An advanced workshop course in the writing of poetry. **Prerequisite(s):** It is strongly recommended that students have already taken EGL 293 , EGL 300 . Six English courses or instructor's permission. **CC:** HUL, HUM, WS

EGL 401 - Sr. Seminar: Advanced Fiction Workshop

Course Units: 1.0 An advanced workshop course in the writing of fiction. **Prerequisite(s):** It is strongly recommended that students have already taken EGL 293 , EGL 301 . Six English courses or instructor's permission. **CC:** HUL, HUM, WS

EGL 402 - English Honors Thesis Seminar 1

Course Units: 0.0 A two-term course required for all English majors who are writing an honors senior thesis. The course is conducted mainly as a writing workshop to guide students through the process of writing a thesis. Workshops focus on developing the research and writing skills needed to complete a successful thesis. There will be weekly individual meetings with the instructor as well as weekly group meetings. The course instructor will direct your thesis. Credit depends on completing both 402 and 403. **CC:** WS

EGL 403 - English Honors Thesis Seminar 2

Course Units: 2.0 A two-term course required for all English majors who are writing an honors senior thesis. The course is conducted mainly as a writing workshop to guide students through the process of writing a thesis. Workshops focus on developing the research and writing skills needed to complete a successful thesis. There will be weekly individual meetings with the instructor as well as weekly group meetings. The course instructor will direct your thesis. Credit depends on completing both 402 and 403. **CC:** HUL, WS, HUM

- Note: EGL 402-403 Honors Thesis Workshop 1-2 is offered each year in the Fall-Winter to qualified honors candidates by application. For Honors requirements, see below.

EGL 404 - Sr. Seminar (Fall): The Faerie Queene

Course Units: 1.0 This course will explore Edmund Spenser's wild and wacky epic poem, *The Faerie Queene.* Published in 1596, *The Faerie Queene* is full of powerful women, knights, dragons, monsters, and more; its rich cast includes both Queen Elizabeth I and a young King Arthur. In depicting a world full of chivalry and adventure, this poem offers striking insights into how Shakespeare's contemporaries understood their society and themselves. Full of beautiful lyrics, comedy, and tragedy, *The Faerie Queene* shows the many different possibilities for thinking about how Renaissance readers viewed the relationship between poetry and social identity. This poem is thus a fascinating window into Renaissance society even as it explores issues still relevant today, from questions about female agency to religious prejudice to class and social conflict. Students will be offered guidance in developing their own projects to explore *The Faerie Queene*, and the focus of the class discussions will be determined by student interests**.** **Prerequisite(s):** Six English courses or instructor's permission. **CC:** WS

EGL 405 - Sr. Seminar (Winter):

Course Units: 1.0 **Prerequisite(s):** Six English courses or instructor's permission. **CC:** WS

EGL 406 - Sr. Seminar (Spring):

Course Units: 1.0 **Prerequisite(s):** Six English courses or instructor's permission. **CC:** WS **ISP:** AFR, AMS, GSWS

Requirements for English Honors: Thesis (402-3):

Fourteen courses are required for honors: the usual twelve plus a two-term honors thesis seminar, EGL 402 - 403.* The two-term thesis is in addition to the required senior seminar. Other qualifications for honors thesis applicants include: a 3.3 GPA both cumulatively and in the English major; successful completion of EGL 302: Literary Theory during the winter of students' junior year; acceptance of a topic proposal, submitted during the Spring Term of students' junior year. Participation in the thesis workshop presupposes that students will be in residence during the fall and winter of their senior year. See the English Department website for a more complete description.

In this two-term honors thesis seminar-workshop, students learn research methods, discuss their topics and theoretical approaches to them, share ideas and workshop their creative and critical writing, as they work toward completing their individual theses under the direction of the seminar instructor. Prospective Honors thesis students all take EGL 302 prior to proposing a thesis, whether they plan to write creative or analytical theses. Creative writing thesis students should have already participated in at least one creative writing workshop in their proposed genre. Students should discuss possible thesis subjects with their advisor and other departmental members in order to develop an innovative, sustained yet appropriately-sized thesis topic. Prospective Honors students submit a two-to three-page thesis proposal accompanied by a writing sample for departmental review.

*Note: Double major honors students who are writing one thesis that combines both fields of study should register for IDM 487-488 (with signatures from a director in each department) yet attend EGL 402-403. DO NOT REGISTER FOR BOTH IDM and EGL 402-3. The option of a combined double major thesis is not available in conjunction with all departments, and, of course, relies on a research topic that is acceptable to both departments.

Entrepreneurship

Courses in a variety of departments at Union examine ways in which entrepreneurs think and act. As students identify how people, in many times and places, have succeeded in attaining their visions for change, they will develop an ability to do the same themselves. In addition to department-based courses, several interdisciplinary courses described below provide multidisciplinary approaches to skills including critical analysis and communication that will enable students to put their own ideas and inspiration into action in their chosen fields and areas of interest.

Entrepreneurial Courses

Visual Arts

AAH 208 - The Business of Visual Art and Contemporary Entrepreneurship

Course Units: 1.0 In this course students will study and learn the business of the art world and entrepreneurship in the visual arts from the early 20th century through today. Topics to be covered include the economics of the art market and the commodity of art, auction houses, private collectors, art fairs, gallery ownership, art foundations, non-for-profits, and art criticism. Group assignments, field trips and guest lectures form a large component of the course. **CC:** LCC, HUM **ISP:** AMS

Anthropology

- ANT 232T - Fiji Culture & Entrepreneurship

Classics

CLS 151 - The Ancient World in Film and Literature

Course Units: 1.0 Greco-Roman antiquity has been a favorite topic of Hollywood for years. This fascination continues today, with the recent appearance of major blockbusters as well as TV productions. Why do the Greeks and Romans appeal to a modern audience? This course will consider ancient texts in translation alongside their modern film representations. Our goal will not be to consider where the films went "wrong." Instead, we will question how these films recast and reinterpret classical texts to reflect modern interests. This course will include an "entrepreneurship module." We will question what is entrepreneurship and if Hollywood's commodification of the ancient world is entrepreneurial. **CC:** LCC, HUL, HUM, JCAD, JCHF, JLIT **ISP:** AMS, FLM

CLS 157 - Entrepreneurship in the Ancient World

Course Units: 1.0 **(TBD: Staff)** "Entrepreneurship" (or seizing upon and exploiting opportunity) is a mindset that has existed at various times and places. Through a variety of ancient sources, including legal, historical, and literary works, students will use the ancient world as a laboratory in which to observe and to assess what may or may not have constituted opportunity in the past and to examine strategies employed (as well as opportunities missed) for taking advantage of available resources in a variety of situations: economic, political, and religious. **CC:** HUM, LCC

Economics

ECO 332 - Economics of Technological Change

Course Units: 1.0 The course will cover both macro and micro aspects of technological change. Topics include: Exogenous growth models, innovation-driven Schumpeterian growth models, creative destruction and the economy, competition and market structure, valuation of Research and Development (R&D) and patents, patent litigation and enforcement of Intellectual Property Rights (IPRs), innovation, technology diffusion in the global economy, and design of IPR regimes and R&D policies. **Prerequisite(s):** ECO 241 or ECO 242 **CC:** SOCS **ISP:** STS

- ECO 232T - Fiji Culture and Entrepreneurship

History

Political Science

PSC 351 - Global Organized Crime

Course Units: 1.0 This course will focus on the emergence of new transnational criminal networks in the age of globalization, and the sources and patterns of political corruption in a comparative perspective. Specific issues to be explored include: trafficking zones, weak states, economic underdevelopment, the western consumer demand for illegal commodities, international anti-corruption discourse, US drug policy, comparative analysis of mafia organizations, and how private money corrupts democracies. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** REE

Interdisciplinary Courses

Courses that take multidisciplinary approaches to entrepreneurship

Environmental Engineering

Environmental Engineering

Course requirements with a typical schedule are given below. Students should consult with their academic advisor about the scheduling and sequencing of courses. A total of 40 courses is required for the major.

Requirements for the Major

A total of 40 courses including the following:

Math and Science:

Select One Calculus Sequence

Sequence One

MTH 110 - Calculus 1: Differential Calculus

Course Units: 1.0 Differential calculus of functions of a single variable. Limits, continuity, differentiation, computational aspects of Maclaurin and Taylor polynomials and series, and applications. **Note:** Not intended for students who have passed MTH 059 ,MTH 105 , MTH 113 , MTH 110P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P.

Prerequisite(s): One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

Sequence Two

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

Sequence Three

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

IMP 120 - Integrated Math/Physics

Course Units: 2.0 An introductory team-taught, two-term-long sequence of integrated courses, two in mathematics and two in physics, roughly spanning the content of MTH 115 , MTH 117 , PHY 120 and PHY 121 . Designed for engineering students as well as other interested students. **Prerequisite(s):** MTH 113 , by invitation. **CC:** QMR, SCLB, GNPS **ISP:** ENS

IMP 121 - Integrated Math/Physics

Course Units: 2.0 An introductory team-taught, two-term-long sequence of integrated courses, two in mathematics and two in physics, roughly spanning the content of MTH 115 , MTH 117 , PHY 120 and PHY 121 . Designed for engineering students as well as other interested students. **Prerequisite(s):** IMP 120 **CC:** QMR, SCLB **ISP:** ENS

Sequence Four

MTH 105 - Differential Calculus with Precalculus

Course Units: 1.0 Differential calculus of functions of a single variable, supplemented with supporting precalculus. Limits, continuity, differentiation, and applications. **CC:** QMR **ISP:** ENS **Note:** Not intended for students with credits for MTH 059 ,MTH 110 , MTH 113 , MTH 110P or MTH 113P.

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

Additional Requirements

- Mathematics

MTH 130 - Ordinary Differential Equations

Course Units: 1.0 Topics include first and second-order differential equations and first-order systems, including analytic, geometric, and numerical techniques, classification of first-order linear systems by eigenvalues, forcing and resonance, and the Laplace transform. Applications include but are not limited to population models, RC circuits, and damped and undamped harmonic oscillators. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 **Note:** Not open to students who have passed MTH 234 . **CC:** GDQR

Select one chemistry sequence

Sequence One

CHM 101 - Introductory Chemistry 1

Course Units: 1.0 This is an introductory course that focuses on atomic and molecular structure, chemical bonding, stoichiometry, aqueous chemical reactions, and the properties of gases, liquids, solids and solutions. **Prerequisite(s):** Not open to students who have scored 4 or 5 on the AP Chemistry Exam or who have completed CHM 110H . All students who wish to enroll in an introductory chemistry course must take a placement examination to determine the appropriate course. See Course Selection Guidelines for more information on placement. **Corequisite(s):** CHM 101L **CC:** SCLB **Lecture/Lab Hours** Three lab hours/week,6/10 weeks. **ISP:** ENS

CHM 102 - Introductory Chemistry 2

Course Units: 1.0 A continuation of CHM 101 , focusing on thermodynamics, chemical kinetics, chemical equilibrium, acids and bases, electrochemistry, and an introduction to organic chemistry. **Prerequisite(s):** CHM 101 or placement via the placement exam. **Corequisite(s):** CHM 102L **Prereq/Corequisite(s):** Not open to students who have taken CHM 110H . **CC:** SCLB, GNPS **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

CHM 231 - Organic Chemistry 1

Course Units: 1.0 A mechanistic approach to the chemistry of carbon compounds organized around the reactions of functional groups. We cover alkanes, cycloalkanes, alcohols, alkyl halides (nucleophilic substitution and elimination), alkenes (addition and elimination), alkynes, spectroscopy (IR and NMR) and computer molecular modeling. **Prerequisite(s):** CHM 102 or CHM 110H **Corequisite(s):** CHM 231L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

CHM 245 - Environmental Chemistry

Course Units: 1.0 A course focused on the role of chemical principles such as chemical equilibrium, kinetics and chemical structure in understanding natural environmental cycles and the impacts of human activity on those cycles. Topics covered include: aquatic chemistry and water pollution, atmospheric chemistry and air pollution, energy and climate change, and toxic organic chemicals in the environment. **Prerequisite(s):** CHM 231 **CC:** SET **ISP:** ENS

Sequence Two

CHM 110H - Honors Introductory Chemistry

Course Units: 1.0 A laboratory-intensive course that covers the main topics of CHM 101 and CHM 102 and is meant to replace those courses for students who have strong backgrounds in introductory chemistry. **Prerequisite(s):** Students who have scored 4 or 5 on the AP chemistry exam will be automatically placed into CHM 110H; see Course Selection guidelines for more information on placement. **CC:** SCLB, GNPS **ISP:** ENS **Note:** Students who have scored 4 or 5 on the AP chemistry exam or who successfully complete CHM 110H will also receive AP credit for CHM 101 .

CHM 231 - Organic Chemistry 1

Course Units: 1.0 A mechanistic approach to the chemistry of carbon compounds organized around the reactions of functional groups. We cover alkanes, cycloalkanes, alcohols, alkyl halides (nucleophilic substitution and elimination), alkenes (addition and elimination), alkynes, spectroscopy (IR and NMR) and computer molecular modeling. **Prerequisite(s):** CHM 102 or CHM 110H **Corequisite(s):** CHM 231L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

CHM 245 - Environmental Chemistry

Course Units: 1.0 A course focused on the role of chemical principles such as chemical equilibrium, kinetics and chemical structure in understanding natural environmental cycles and the impacts of human activity on those cycles. Topics covered include: aquatic chemistry and water pollution, atmospheric chemistry and air pollution, energy and climate change, and toxic organic chemicals in the environment. **Prerequisite(s):** CHM 231 **CC:** SET **ISP:** ENS

Biology

BIO 103 - Diversity of Life: Heredity, Evolution, and Ecology

Course Units: 1.0 More than 3.5 billion years of evolution have resulted in the astonishing diversity of life on earth. This course will explore biodiversity through the lens of ecology, evolution, and heredity, and will investigate various topics, including: the history of life on Earth, evolutionary change, Mendelian & non-Mendelian inheritance, as well as human impacts on biodiversity and ecological functioning. These processes will be studied in the lab using animal model systems, computer simulations, observations of diversity, and molecular techniques. Students will learn experimental design, data analysis, scientific writing, and various laboratory skills during weekly lab sessions. **Corequisite(s):** BIO 103L **CC:** SCLB, GNPS **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 104. **ISP:** ENS

BIO 320 - Ecology w/lab

Course Units: 1.0 Organisms and their environment, population and community ecology, and the structure and integration of ecosystems will be discussed along with a focus on animal community ecology. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 320L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS **Note:** There may be field trips requiring scheduling outside of normal class time.

Natural science Elective (choose one)

ENS 100 - Introduction to Environmental Studies

Course Units: 1.0 An introduction to environmental studies from a scientific, policy, and engineering perspective. This course covers human-environment interactions, with a focus on the impacts of human activities on natural systems such as climate, air, water, and species diversity and the ensuing environmental injustice. The course discusses sustainable solutions for how we can build systems that will support billions of humans and the natural world. Fieldwork during lab periods involves the investigation of local environmental problems and solutions. This course is intended for first- and second-year Environmental Science and Environmental Policy majors, but it is open to all students. **Corequisite(s):** ENS 100L **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 110 - Introduction to Geosciences

Course Units: 1.0 Examination of Earth materials and processes: How our dynamic planet works including plate tectonics, geologic age determination, processes that form the rocks we see at the Earth's surface, development of the stunning variety of landscapes we see, and other topics of contemporary interest including floods, underground water resources, coastal erosion, earthquakes, landslides, volcanoes, and climate change. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 110L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 112 - Environmental Geology

Course Units: 1.0 The increasing interplay between the environment and human activity has profound effects on our landscape and society. This course focuses on anthropogenic issues such as climate change, soil and groundwater contamination, traditional petroleum resource extraction and dependence, mineral and water resources, and alterative sources of energy. To understand how humans have perturbed the natural environment, it is critical to understand geologic principles and processes. The course also explores natural disasters including earthquakes, volcanoes, hurricanes, landslides, floods, and coastal erosion and their effects on different segments of society, as the impacts of natural disasters are affected by various socio-economic factors. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 112L **CC:** SCLB, GNPS **ISP:** ENS, STS

Upper-level Geoscience elective

Engineering and Computer Science:

ESC 100 - Exploring Engineering

Course Units: 1.0 An introduction to engineering including fundamental topics core to engineering. The course includes a weekly design studio that emphasizes engineering design, teamwork, technical writing and ethics through several individual and team design projects. Not available to junior or senior engineering students. **Corequisite(s):** ESC 100L **CC:** SET, GETS **ISP:** STS **Note:** General engineering course common to more than one program.

One from "Introduction to Computer Science":

CSC 108 - Scientific Computing: Introduction to Computer Science

Course Units: 1.0 Computers are used as tools in analyzing and solving scientific problems as well as being embedded in many applications and experimental equipment used by today's scientists. This course is designed to introduce students to computer programming and problem solving through the use of Python. Python is a language commonly used by the scientific community, and we will focus on using it to address scientific problems, using extensions that facilitate scientific computing. CC: QMR, SET Note: A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 105 - Game Development: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a computer games theme. Introduces students to algorithms, basic data structures, and programming techniques. Computer game development is used as an example application area and students implement their own games throughout the course. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area, focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages.

Prereq/Corequisite(s): A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

Environmental Engineering Core:

CEE 101 - Engineering Graphics

Course Units: 1 Engineering graphics with emphasis on engineering drawings and introduction to modeling. Topics include sketching, descriptive geometry, sectioning, auxiliary views, site drawings, CAD, and building techniques. AutoCAD software package is used extensively in this course. **CC:** GCAD

CEE 201 - Mechanics 1

Course Units: 1 Analysis of forces acting on particles and rigid bodies in static equilibrium; equivalent systems of forces; friction; centroids and moments of inertia; introduction to energy methods. **Prerequisite(s):** PHY 120 , MTH 110 (or equivalent)

CEE 203 - Probability & Statistics

Course Units: 1 An introductory calculus-based statistics class for engineers covers topics in data collection, probability, continuous and discrete probability distributions, data collection and presentation, statistical inference, confidence limits, uncertainty analysis, tolerance intervals, analysis of variance, least squares regression, and an introduction to design of experiments. **Prerequisite(s):** MTH 115

CEE 250 - Contaminant Fate & Transport

Course Units: 1 Collection of domestic wastewater; organic chemistry and microbiology related to wastewater; analysis and design of physical, chemical, and biological processes, viral wastewater monitoring techniques, and operations for treatment of domestic and industrial wastewater; natural purification of streams; and advanced wastewater treatment processes. Current waste containment and pollution prevention practices. Emphasis will be on the design of containment facilities and regulatory processes. Design strategies will include the use of geosynthetics in containment applications, waste characterization, contamination mitigation measures, and landfill monitoring programs. **Prerequisite(s):** CHM 245

CEE 260 - Thermo-Fluid w/Lab

Course Units: 1

Thermal-Fluid Systems is an integrated study of fundamental topics in thermodynamics, fluid statics and mechanics. The course develops the conservation principles for mass, energy, and linear momentum for control volume analysis as well as the 2nd Law of Thermodynamics. Dimensional analysis principles are developed and applied to incompressible flow in pipes, open channel flow, power generation systems, and air-conditioning focusing on the control volume approach. **Prerequisite(s):** CEE 201 , MTH 115 or IMP 121

CEE 301 - Engineering Comp. Modeling

Course Units: 1 Basic programming concepts introduced in CS10X are expanded to investigate computational solutions to engineering problems. A progression of numerical solutions are investigated with student written codes and a

gradual progression of implementing library software. Topics include solution techniques to 1-D nonlinear equations, linear systems of equations and nonlinear systems of equations. Interpolation and curve fitting techniques are developed using engineering data. Finite difference integration and differentiation are introduced with a natural progression to solving 1-D, first order differential equations using Euler, Heun, and Runge Kutta algorithms. Higher order differential equations are analyzed using reduction of order. **Prerequisite(s):** CSC 10X

CEE 340 - Construction Management

Course Units: 1 Developing a "life cycle" viewpoint in discussing the participants, the processes, and techniques of project management for construction. Topics include an introduction to bid packages, contracts, planning, scheduling, and estimation; orthographic and isometric drawings, dimensioning, auxiliary views, sectioning, and tolerances. Preparation of working drawings and solution of drafting problems in civil engineering related areas such as drawings of steel structures, concrete structures, and foundation layouts. Computer aided graphical representation and data analysis using two and three dimensional charts and plots. **Prerequisite(s):** CEE 101 , CEE 3XX

CEE 350 - Fundamentals of Environmental Engineering

Course Units: 1 This course provides an overview of the foundational principles of physics, chemistry, biology, and engineering to understanding and addressing the major issues facing environmental engineers. In particular, quantitative assessments of water quality, air quality, soil quality, and solid/hazardous waste management will be addressed with a focus on minimizing the human health and environmental impacts of contamination. A problem-solving and case study approach will be used to address the topics covered and quantitative methods of mass and energy balances will be emphasized throughout the term. The technical aspect of environmental engineering will be contextualized through the chosen case studies and through an overview of environmental regulations and policy in the US. **Prerequisite(s):** CEE 260

CEE 360 - Env. Hydraulics w/Lab

Course Units: 1 Surface and groundwater hydrology; reservoir, lake, and stream pollution; water and wastewater treatment. Applications of fluid mechanics principles to design of civil engineering fluid systems, including flow measurement, single and multiple pipelines, water distribution networks, hydroelectric power generation, and flood control. Emphasis on computer assisted methods for design. **Prerequisite(s):** CEE 260

CEE 491 - Capstone Design 1

Course Units: 1 In this first term of the two term design course sequence students work in teams to research, ideate, and design potential solutions to open-ended projects. The first term of this design course will focus on professional practice, effective teaming and communication, and the beginning phases of the design process including but not limited to exploratory brainstorming, relevant documentation and regulations, site planning, and sustainability in design. The term will culminate with a presentation and written report detailing design assumptions, site and project constraints, case studies, and alternatives considered. **Prerequisite(s):** CEE 440 or any CEE 4XX

CEE 492 - Capstone Design 2

Course Units: 1 In this second term of the two term design course sequence students work in teams to select, design, prototype (if appropriate), and effectively present solutions to open-ended projects. The second term focuses on additional development of teaming and communication skills, discussion of professional ethics and licensure, design selection, relevant regulatory documents, and the detailed design needed for Civil and Environmental Engineering designs. Teams will create presentations and written reports that cover the execution of the selected design in detail including technical calculations and drawings, cost, safety, design/construction schedule and feasibility.
Prerequisite(s): CEE 491

Technical Electives:

Three courses from approved list with a minimum number of 2 CEE electives at the 300-level or higher. Students should consult with their advisors.

Capstone Design:

CEE 491 - Capstone Design 1

Course Units: 1 In this first term of the two term design course sequence students work in teams to research, ideate, and design potential solutions to open-ended projects. The first term of this design course will focus on professional practice, effective teaming and communication, and the beginning phases of the design process including but not limited to exploratory brainstorming, relevant documentation and regulations, site planning, and sustainability in design. The term will culminate with a presentation and written report detailing design assumptions, site and project constraints, case studies, and alternatives considered. **Prerequisite(s):** CEE 440 or any CEE 4XX

CEE 492 - Capstone Design 2

Course Units: 1 In this second term of the two term design course sequence students work in teams to select, design, prototype (if appropriate), and effectively present solutions to open-ended projects. The second term focuses on additional development of teaming and communication skills, discussion of professional ethics and licensure, design selection, relevant regulatory documents, and the detailed design needed for Civil and Environmental Engineering designs. Teams will create presentations and written reports that cover the execution of the selected design in detail including technical calculations and drawings, cost, safety, design/construction schedule and feasibility.
Prerequisite(s): CEE 491

Electives:

Electives should be chosen in consultation with the student's advisor to meet the Complex Questions: Global Challenges & Social Justice requirements.

Course requirement with a typical schedule are given below. Students should consult with their academic advisor about the scheduling and sequencing of courses. At total of 40 courses is required for the major.

First Year

ESC 100 - Exploring Engineering

Course Units: 1.0 An introduction to engineering including fundamental topics core to engineering. The course includes a weekly design studio that emphasizes engineering design, teamwork, technical writing and ethics through several individual and team design projects. Not available to junior or senior engineering students. **Corequisite(s):** ESC 100L **CC:** SET, GETS **ISP:** STS **Note:** General engineering course common to more than one program.

ENS 100 - Introduction to Environmental Studies

Course Units: 1.0 An introduction to environmental studies from a scientific, policy, and engineering perspective. This course covers human-environment interactions, with a focus on the impacts of human activities on natural systems such

as climate, air, water, and species diversity and the ensuing environmental injustice. The course discusses sustainable solutions for how we can build systems that will support billions of humans and the natural world. Fieldwork during lab periods involves the investigation of local environmental problems and solutions. This course is intended for first- and second-year Environmental Science and Environmental Policy majors, but it is open to all students. **Corequisite(s):** ENS 100L **CC:** SCLB, GNPS **ISP:** ENS, STS

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

CEE 101 - Engineering Graphics

Course Units: 1 Engineering graphics with emphasis on engineering drawings and introduction to modeling. Topics include sketching, descriptive geometry, sectioning, auxiliary views, site drawings, CAD, and building techniques. AutoCAD software package is used extensively in this course. **CC:** GCAD

MTH 110 - Calculus 1: Differential Calculus

Course Units: 1.0 Differential calculus of functions of a single variable. Limits, continuity, differentiation, computational aspects of Maclaurin and Taylor polynomials and series, and applications. **Note:** Not intended for students who have passed MTH 059 ,MTH 105 , MTH 113 , MTH 110P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

FYI 100 - First-Year Inquiry

Course Units: 1.0 First-Year Inquiry engages students in the exploration of ideas and diverse perspectives through critical reading, thinking, and writing.

- Introduction to Computer Science
- Elective*

Sophomore Year

CEE 201 - Mechanics 1

Course Units: 1 Analysis of forces acting on particles and rigid bodies in static equilibrium; equivalent systems of forces; friction; centroids and moments of inertia; introduction to energy methods. **Prerequisite(s):** PHY 120 , MTH 110 (or equivalent)

CEE 203 - Probability & Statistics

Course Units: 1 An introductory calculus-based statistics class for engineers covers topics in data collection, probability, continuous and discrete probability distributions, data collection and presentation, statistical inference, confidence limits, uncertainty analysis, tolerance intervals, analysis of variance, least squares regression, and an introduction to design of experiments. **Prerequisite(s):** MTH 115

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

CHM 101 - Introductory Chemistry 1

Course Units: 1.0 This is an introductory course that focuses on atomic and molecular structure, chemical bonding, stoichiometry, aqueous chemical reactions, and the properties of gases, liquids, solids and solutions. **Prerequisite(s):** Not open to students who have scored 4 or 5 on the AP Chemistry Exam or who have completed CHM 110H . All students who wish to enroll in an introductory chemistry course must take a placement examination to determine the appropriate course. See Course Selection Guidelines for more information on placement. **Corequisite(s):** CHM 101L **CC:** SCLB **Lecture/Lab Hours** Three lab hours/week,6/10 weeks. **ISP:** ENS

CHM 102 - Introductory Chemistry 2

Course Units: 1.0 A continuation of CHM 101 , focusing on thermodynamics, chemical kinetics, chemical equilibrium, acids and bases, electrochemistry, and an introduction to organic chemistry. **Prerequisite(s):** CHM 101 or placement via the placement exam. **Corequisite(s):** CHM 102L **Prereq/Corequisite(s):** Not open to students who have taken CHM 110H . **CC:** SCLB, GNPS **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

BIO 103 - Diversity of Life: Heredity, Evolution, and Ecology

Course Units: 1.0 More than 3.5 billion years of evolution have resulted in the astonishing diversity of life on earth. This course will explore biodiversity through the lens of ecology, evolution, and heredity, and will investigate various topics, including: the history of life on Earth, evolutionary change, Mendelian & non-Mendelian inheritance, as well as human impacts on biodiversity and ecological functioning. These processes will be studied in the lab using animal model systems, computer simulations, observations of diversity, and molecular techniques. Students will learn experimental design, data analysis, scientific writing, and various laboratory skills during weekly lab sessions. **Corequisite(s):** BIO 103L **CC:** SCLB, GNPS **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 104. **ISP:** ENS

CEE 260 - Thermo-Fluid w/Lab

Course Units: 1

Thermal-Fluid Systems is an integrated study of fundamental topics in thermodynamics, fluid statics and mechanics. The course develops the conservation principles for mass, energy, and linear momentum for control volume analysis as well as the 2nd Law of Thermodynamics. Dimensional analysis principles are developed and applied to incompressible

flow in pipes, open channel flow, power generation systems, and air-conditioning focusing on the control volume approach. **Prerequisite(s):** CEE 201 , MTH 115 or IMP 121

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

MTH 130 - Ordinary Differential Equations

Course Units: 1.0 Topics include first and second-order differential equations and first-order systems, including analytic, geometric, and numerical techniques, classification of first-order linear systems by eigenvalues, forcing and resonance, and the Laplace transform. Applications include but are not limited to population models, RC circuits, and damped and undamped harmonic oscillators. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 **Note:** Not open to students who have passed MTH 234 . **CC:** GDQR

- Elective*

Junior Year

CHM 231 - Organic Chemistry 1

Course Units: 1.0 A mechanistic approach to the chemistry of carbon compounds organized around the reactions of functional groups. We cover alkanes, cycloalkanes, alcohols, alkyl halides (nucleophilic substitution and elimination), alkenes (addition and elimination), alkynes, spectroscopy (IR and NMR) and computer molecular modeling. **Prerequisite(s):** CHM 102 or CHM 110H **Corequisite(s):** CHM 231L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

CHM 245 - Environmental Chemistry

Course Units: 1.0 A course focused on the role of chemical principles such as chemical equilibrium, kinetics and chemical structure in understanding natural environmental cycles and the impacts of human activity on those cycles. Topics covered include: aquatic chemistry and water pollution, atmospheric chemistry and air pollution, energy and climate change, and toxic organic chemicals in the environment. **Prerequisite(s):** CHM 231 **CC:** SET **ISP:** ENS

CEE 250 - Contaminant Fate & Transport

Course Units: 1 Collection of domestic wastewater; organic chemistry and microbiology related to wastewater; analysis and design of physical, chemical, and biological processes, viral wastewater monitoring techniques, and operations for treatment of domestic and industrial wastewater; natural purification of streams; and advanced wastewater treatment processes. Current waste containment and pollution prevention practices. Emphasis will be on the design of containment facilities and regulatory processes. Design strategies will include the use of geosynthetics in containment applications, waste characterization, contamination mitigation measures, and landfill monitoring programs. **Prerequisite(s):** CHM 245

CEE 301 - Engineering Comp. Modeling

Course Units: 1 Basic programming concepts introduced in CS10X are expanded to investigate computational solutions to engineering problems. A progression of numerical solutions are investigated with student written codes and a

gradual progression of implementing library software. Topics include solution techniques to 1-D nonlinear equations, linear systems of equations and nonlinear systems of equations. Interpolation and curve fitting techniques are developed using engineering data. Finite difference integration and differentiation are introduced with a natural progression to solving 1-D, first order differential equations using Euler, Heun, and Runge Kutta algorithms. Higher order differential equations are analyzed using reduction of order. **Prerequisite(s):** CSC 10X

CEE 350 - Fundamentals of Environmental Engineering

Course Units: 1 This course provides an overview of the foundational principles of physics, chemistry, biology, and engineering to understanding and addressing the major issues facing environmental engineers. In particular, quantitative assessments of water quality, air quality, soil quality, and solid/hazardous waste management will be addressed with a focus on minimizing the human health and environmental impacts of contamination. A problem-solving and case study approach will be used to address the topics covered and quantitative methods of mass and energy balances will be emphasized throughout the term. The technical aspect of environmental engineering will be contextualized through the chosen case studies and through an overview of environmental regulations and policy in the US. **Prerequisite(s):** CEE 260

- BIO 2XX - Introduction to Ecology
- Upper-level Geology Elective
- Technical Elective 1
- Elective*

Senior Year

CEE 340 - Construction Management

Course Units: 1 Developing a "life cycle" viewpoint in discussing the participants, the processes, and techniques of project management for construction. Topics include an introduction to bid packages, contracts, planning, scheduling, and estimation; orthographic and isometric drawings, dimensioning, auxiliary views, sectioning, and tolerances. Preparation of working drawings and solution of drafting problems in civil engineering related areas such as drawings of steel structures, concrete structures, and foundation layouts. Computer aided graphical representation and data analysis using two and three dimensional charts and plots. **Prerequisite(s):** CEE 101 , CEE 3XX

CEE 491 - Capstone Design 1

Course Units: 1 In this first term of the two term design course sequence students work in teams to research, ideate, and design potential solutions to open-ended projects. The first term of this design course will focus on professional practice, effective teaming and communication, and the beginning phases of the design process including but not limited to exploratory brainstorming, relevant documentation and regulations, site planning, and sustainability in design. The term will culminate with a presentation and written report detailing design assumptions, site and project constraints, case studies, and alternatives considered. **Prerequisite(s):** CEE 440 or any CEE 4XX

CEE 492 - Capstone Design 2

Course Units: 1 In this second term of the two term design course sequence students work in teams to select, design, prototype (if appropriate), and effectively present solutions to open-ended projects. The second term focuses on additional development of teaming and communication skills, discussion of professional ethics and licensure, design selection, relevant regulatory documents, and the detailed design needed for Civil and Environmental Engineering designs. Teams will create presentations and written reports that cover the execution of the selected design in detail including technical calculations and drawings, cost, safety, design/construction schedule and feasibility.
Prerequisite(s): CEE 491

- Technical Elective 2
- Technical Elective 3
- Electives (5)*
  *Electives should be chosen to meet the remaining Complex Questions: Global Challenges & Social Justice requirements as well as the student's educational goals which may include double majors and minors. Students should work with their academic advisor to develop an appropriate plan of study.
  **The fall term of the third year is the most common term for going on a full term abroad.

Requirements for Honors:

In additional to meeting all of general college requirements for honors, candidates for honors in Civil Engineering must have an average GPA of 3.3 in their Environmental Engineering core, technical electives, and Capstone design courses as outlined above.

Environmental Science, Policy and Engineering

Director: Associate Professor M. Stahl (Geosciences)
Faculty: Professors K. Bidoshi (Modern Languages), J. Corbin (Biological Sciences), H. Frey (Geosciences), J. Garver (Geosciences), A. Ghaly (Civil and Environmental Engineering), D. Gillikin (Geosciences), I. Kaplan (Sociology), M. Mafi (Civil and Environmental Engineering), A. Morris (History), J. Murphy (English), D. Rodbell (Geosciences); Associate Professors L. Cox (Visual Arts), L. Dosiek (Electrical and Computer Engineering), K. Lynes (English), L. MacManus-Spencer (Chemistry), C. Rodak (Civil and Environmental Engineering), M. Stahl (Geosciences); Assistant Professors S. Benegal (Political Science), M. DeSiervo (Biological Sciences); Senior Lecturers J. Bishop (Biological Sciences), A. Commito (Classics), A. Verheyden (Geosciences)

The Environmental Science, Policy and Engineering (ESPE) program is focused on students with an interest in the science and policy behind the myriad environmental problems that face our world, the political policy mechanisms that may provide solutions to these issues, and the interface between the environment and the human condition. The programs blend the liberal arts and engineering. Students in the ESPE program choose either a BS degree in Environmental Science or a BA degree in Environmental Policy. The BS degree emphasizes the biological, chemical, and geological sciences, as well as physics and engineering, while the BA degree emphasizes the social sciences and humanities. A common set of core courses links the two programs. All students take a common introductory course, a core of 8-11 required courses, and 4-6 courses that define an area of concentration. During the senior year, students typically complete two terms of independent research, and participate in a common ESPE senior seminar.

Environmental Engineering Minor

Requirements for the Minor in Environmental Engineering:

The Environmental Engineering Minor is currently administered by the ESPE program and not the Civil and Environmental Engineering department; please see the Civil and Environmental Engineering Department for the Environmental Engineering major. This program of study requires a minimum of six courses, including one core course and five elective courses. This minor is for students who are interested in the engineering and technical aspects of environmental issues. Completion of this minor will introduce the students to the environmental issues involved in several aspects of human endeavor (energy, water, waste, shelter, etc.); and will prepare them to contribute to design teams working to assess and mitigate environmental impacts.

Please Note: Environmental Science and Environmental Policy majors **are not** allowed to minor in Environmental Engineering.

1. Students must complete the following prerequisites for this minor.

- Choose one from the following:

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

Choose one from the following:

PHY 110 - Physics for the Life Sciences 1

Course Units: 1.0 An introduction to classical mechanics, fluids, and thermodynamics with applications in the life sciences. Students must major in a life science or be admitted by permission of the instructor. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **Corequisite(s):** PHY 110L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

2. Core course

ENS 100 - Introduction to Environmental Studies

Course Units: 1.0 An introduction to environmental studies from a scientific, policy, and engineering perspective. This course covers human-environment interactions, with a focus on the impacts of human activities on natural systems such as climate, air, water, and species diversity and the ensuing environmental injustice. The course discusses sustainable solutions for how we can build systems that will support billions of humans and the natural world. Fieldwork during lab periods involves the investigation of local environmental problems and solutions. This course is intended for first- and second-year Environmental Science and Environmental Policy majors, but it is open to all students. **Corequisite(s):** ENS 100L **CC:** SCLB, GNPS **ISP:** ENS, STS

3. Five courses from the following list of electives.

CEE 208 - Water, Sanitation, Health

Course Units: 1 This course will examine the connections between water, sanitation, and public health. Students will learn about water sources and potential sources of contamination; the role of drinking water and wastewater treatment in reducing outbreaks of disease; and explore real world examples of water and sanitation concerns. Students will work in small teams to critically explore a global water, sanitation and health issue of interest to them with the goal of understanding the physical and societal drivers of the issue, key constraints, and potential solutions. **CC:** GETS **ISP:** ENS

ENS 200 - Energy

Course Units: 1.0 Designed to acquaint the student with the many societal and technological problems facing the United States and the world due to the ever increasing demand for energy. **Corequisite(s):** ENS 200L **Lecture/Lab Hours** One lab per week. **ISP:** ENS

ENS 204 - Geographic Information Systems

Course Units: 1.0 An introduction to Geographic Information Systems (GIS) technology and its practical uses. Topics include history of GIS, geographic data types, primary data structures, system design, map coordinate systems, data sources, metadata, census data, geographic coding and address matching, digitizing, remote sensing imagery, measures of data quality, and needs assessment. An emphasis will be on hands-on instruction using GIS software (ArcView). Students will work with ArcView throughout the term to complete assignments and a class project. Focus areas include archeology, electric and gas utilities, surveying, health and human services, insurance, law enforcement and criminal justice, media and telecommunications, transportation, water and wastewater, and natural resources. The ultimate goal is to use the spatial component of data in conducting analysis and making decisions. **Prerequisite(s):** A good background in the use of modern computer software. **Corequisite(s):** ENS 204L **CC:** SET, GETS **Lecture/Lab Hours** Two class hours and two lab hours weekly. **ISP:** ENS, STS

ENS 208 - Waste Management and Recycling

Course Units: 1.0 This course will introduce students to various sources of solid waste materials including hazardous and nonhazardous waste, and biodegradable and non-biodegradable waste. Focus areas are overview of landfill systems, geosynthetics, geotextiles, geomembranes, geonets, single clay liner, single geomembrane liner, composite liner systems, leak detection and leachate collection, removal and treatment of leachate, and capping and closure systems. The recycling segment will explore natural resources of raw materials including origin and use. It will also investigate the potential and limitation for recycling of materials. The focus area will be various applications of recycling recyclable and nonrecyclable materials especially non-biodegradable waste. Discussion of methods of manufacture and compositions of such materials will concentrate on advanced industrial applications for the reuse of non-recyclable waste materials. Application areas include production of new materials, materials with superior qualities for special purposes, and materials with high level of resistance against certain environmental conditions. The course will also touch on the political aspect of recycling including consumer attitude and government incentives to encourage recycling. **Prerequisite(s):** ENS 100 or GEO 110 **CC:** SET, GETS **ISP:** ENS, STS

ENS 209 - Renewable Energy Systems

Course Units: 1.0 The study of renewable energy resources and the conversion technologies available to utilize them to meet society's energy needs. Topics include forms of energy; First and Second Laws of Thermodynamics; energy conversion and efficiency; sustainability; energy storage. Historical perspective on world and U.S. energy usage, conversion technologies, and energy resources. Fundamentals of the conversion processes and systems involved in the use of solar thermal and photovoltaic, wind, bioenergy, geothermal, thermoelectric, hydro and ocean technologies. The use of hydrogen as a fuel and technologies to produce and use it. Economic and environmental issues relevant to renewable energy resources. Class will be supplemented with laboratory demonstrations and field trips to visit existing renewable energy systems. **Prerequisite(s):** MER 231 or PHY 122 **Corequisite(s):** ENS 209L **CC:** SET **ISP:** ENS, STS

ENS 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on earth and is a vital source of water for household, industrial, and agricultural uses worldwide. The well-being and prosperity of human civilization requires the sound stewardship and sustainable use of our groundwater supplies. In addition to serving as an essential resource for humanity, groundwater plays a central role in many environmental and geologic processes, including the maintenance of river flows between rainfall events, the occurrence of earthquakes, and the genesis of certain types of ore deposits and landforms. Groundwater is also a key consideration in many engineering operations such as the construction of dams and tunnels and the assessment of landslide and land subsidence risk. Groundwater hydrology is a highly interdisciplinary field that brings together the geologic and environmental sciences with engineering. This course will begin by exploring the physical properties of groundwater and the geologic media through which it flows, the physical laws that govern groundwater flow and transport, and techniques for modeling groundwater flow patterns. The mid-part of the course will focus on the engineering aspects of groundwater, covering topics such as the hydraulics of pumping wells, the transport of contaminants within aquifers, the remediation of contaminated aquifers, and well-drilling technology. Later we will cover the role groundwater plays in geologic processes and the role of geology in determining groundwater chemistry and quality. We will also discuss the connections between groundwater and human health and the importance of groundwater in the global food supply. Students will leave this course with the fundamental knowledge needed to begin answering scientific and engineering questions in the fascinating world of groundwater hydrology. **Cross-Listed:** GEO 210 **Prerequisite(s):** ENS 100 or any GEO course numbered 110 or higher. **CC:** GDQR, GETS, GNPS **Lecture/Lab Hours** One lab per week. **ISP:** ENS

ENS 215 - Exploring Environmental Data

Course Units: 1.0 Understanding how the Earth and environment works requires the careful analysis and interpretation of scientific data. Increasingly, the limitations to our understanding lie not in the availability of data, but rather in our ability to analyze and find meaning in it. Deriving insight from environmental data, in particular large and complex datasets, requires new tools, methods, and ways of thinking. In this class we are going to learn how to code in the programming language R and use it to analyze environmental data in order to better understand the Earth's systems. This course will feature a hands-on classroom with programming and data analysis occurring interactively during the class. Students will learn how to analyze and visualize large datasets and how to write code, while also covering interesting components of environmental and Earth sciences. **Prerequisite(s):** Any SET or SCLB. **CC:** SCLB, QMR, GDQR **Lecture/Lab Hours** Weekly lab required. **ISP:** ENS

- ENS 234 - No Nonsense Sensors

ENS 247 - Sustainable Infrastructure

Course Units: 1.0 Infrastructure is the backbone of nations. It is a society's inventory of systems and facilities that allow it to function properly and smoothly. This includes, but is not limited to, roads, bridges, tunnels, dams, transit, waterways, ports, aviation, pipelines, transmission lines, rail, parks, and public buildings such as schools, courts, hospitals, and recreational and sport facilities. Infrastructure involves services such as energy, water supply, wastewater treatment, power and gas distribution grids, waste collection, and sewer disposal. Major advances in technology resulted in digital infrastructure that includes communication networks, signal transmission towers, data centers, information repositories, servers/computers, and the Internet. This course explores the progress humanity achieved in developing infrastructure facilities and the present move towards sustainability. Methods, materials, processes, technologies, practices, and operations required to maintain a healthy environment and efficient infrastructure will be examined. The intersection between policies necessary for sustainable infrastructure and political, economic, social, societal, and cultural factors will be emphasized. **CC:** SET, GETS **Lecture/Lab Hours** Four class hours weekly. **ISP:** ENS, STS

ENS 252 - Geoenvironmental Applications

Course Units: 1.0 This course introduces field applications related to soil and water. It explores the natural characteristics and testing of soil as a construction material and as a bearing layer. It covers seepage analysis, aquifers, and well fields. It details the components of containment systems for waste disposal to alleviate environmental pollution and contamination. It also presents the basics of water movement in closed conduits and in open channels, and the development of supply networks. For labs, students gain experience in utilizing industry-standard testing methods of the American Society for Testing and Materials (ASTM). Tests include soil classification, composition, flow and permeability, compaction, compressibility, strength, slope stability, and environmental geotechnology with focus on the Environmental Protection Agency's (EPA) design specifications. **Prerequisite(s):** MTH 112 or higher, and PHY 120 or higher. **Corequisite(s):** ENS 252L **CC:** SCLB **Lecture/Lab Hours** Three class hours and a weekly lab. **ISP:** ENS, STS

ENS 253 - Environmentally Friendly Buildings

Course Units: 1.0 Many energy consumption and adverse environmental effects are attributable to buildings and their use. In this course, through instructions, hands-on experience, computer simulation, and research, the students will become acquainted with the inner workings of the subsystems in buildings: foundations, framings, walls, sidings, roof, electrical systems, lighting, appliances, heating, air-conditioning, ventilation, indoor air quality, basement, crawl space, attic, water and moisture management; plumbing, flooring, finishes, furniture, insulation, xeriscaping, and LEED rating system. The students will become aware of indoor and outdoor environmental issues and the life cycle costs of the existing systems. They will also learn the latest science and technology to reduce the negative effect of these subsystems on the environment. Laboratory: hands-on experience with the above subsystems, site visits, Computer simulations, research, projects, and presentations. There are no prerequisites for this course and it is open to all students. **Corequisite(s):** ENS 253L **CC:** SET, GDQR, GETS, SCLB **ISP:** ENS, STS

ENS 277 - The Water Paradox

Course Units: 1.0 Fresh water is tasteless, odorless, and colorless. These characteristics make water one of the most intriguing materials. It is a necessity for life. A paradox involves features or qualities of contradictory nature. Water is notorious with such qualities. Water is one of the cheapest materials yet it is the most precious commodity known to humanity. Water could be the source of peace and development yet it could be a reason for war and conflict. Water could be a force for good to generate hydropower yet unchecked or unregulated this force could be in the form of destructive floods. Water could be a weapon to combat desertification yet too much thereof could cause erosion and failures. Floods come with loads of mud and silt that charge river deltas and keep them fertile yet weaker floods result in lesser deposits that could threaten river deltas with sea attacks. Water has always been a main reason for people to settle the land yet a shortage thereof could force people to migrate and leave their homeland. This course shows the role water played in the past, is presently playing, and will play in the future in defining communities and societies. **CC:** SET, GETS **ISP:** ENS, STS

ENS 299 - Environmental Forensics

Course Units: 1.0 An interdisciplinary course that will present topics detailing the intersection between the environment, ethics, law, society, litigation, policy, economics, pollution/contamination, cleanup, testing, standards, and sustainability. Sources of environmental problems are usually related to emissions, pollution, contamination, and/or waste disposal. Whether the cause is intentional or non-intentional, natural factors or a man-made disaster, or due to normal operation or accident, a crisis ensues and cleanup becomes necessary. This inevitably leads to legal actions and litigations that rely on experts in conducting scientific investigations to establish the facts surrounding potential controversies. Topics discussed in the course include liability, environmental site assessment, insurance litigation, toxic torts, science tools, sampling & measurements, statistical analysis, chemical fingerprinting, contaminant transport models, and environmental forensic microscopy. The course will illustrate the above points using case studies. **CC:** SET, GETS, WAC **ISP:** ENS, STS

GEO 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on Earth and serves as a vital resource that supports the economies and ecosystems of the world - including providing much of the irrigation water that grows our food, supplying drinking water to over 2 billion people, and sustaining surface water bodies and groundwater dependent ecosystems. With the world's groundwater resources threatened by intensive groundwater pumping, environmental and climate change, and the release of contaminants into the environment, there is a pressing need to better understand and manage this resource. Groundwater hydrology is a highly interdisciplinary field that brings together the geologic and environmental sciences with engineering. This course will begin by exploring the environmental and geologic factors that influence the occurrence and movement of groundwater. We will then delve into the physical laws the govern groundwater flow and learn how to model these flows. Later in the course we will cover the role of groundwater in a range of geologic and ecological processes. We will also cover engineering applications of groundwater such as the hydraulics of pumping wells, land subsidence, and the movement of contaminants within aquifers. Students will leave this course with the fundamental knowledge needed to begin answering the scientific and engineering challenges related to our groundwater resources. **Cross-Listed:** ENS 210 **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 210L **CC:** GDQR, GETS, GNPS **ISP:** ENS

MER 231 - Thermodynamics 1

Course Units: 1.0 A basic engineering science course dealing with relations between heat and other forms of energy. Topics include: basic thermodynamic principles, properties of simple substances, energy and the first law of thermodynamics, entropy and the second law of thermodynamics, and ideal cycle analysis. Elementary environmental economic and sustainability considerations related to thermodynamic processes. **Prerequisite(s):** PHY 120 & (MTH 112 or MTH 113) or IMP 120. **Corequisite(s):** CHM 101 **CC:** ENS

TAB 333T - New Zealand Mini-Term Abroad

Course Units: 1 **CC:** LCC **ISP:** ENS

Environmental Policy, B.A.

Requirements for the Major in Environmental Policy

Includes ENS 100, four core policy/humanities courses, one quantitative method or spatial analysis course; three required science courses; four upper level policy/humanities courses in an area of concentration; one environmental seminar; one senior seminar; and two thesis credits for a total of 17 courses. Specific requirements are listed below: (Please note that students may not develop an ID major with Environmental Policy).

A. Introductory course

ENS 100 - Introduction to Environmental Studies

Course Units: 1.0 An introduction to environmental studies from a scientific, policy, and engineering perspective. This course covers human-environment interactions, with a focus on the impacts of human activities on natural systems such as climate, air, water, and species diversity and the ensuing environmental injustice. The course discusses sustainable solutions for how we can build systems that will support billions of humans and the natural world. Fieldwork during lab periods involves the investigation of local environmental problems and solutions. This course is intended for first- and second-year Environmental Science and Environmental Policy majors, but it is open to all students. **Corequisite(s):** ENS 100L **CC:** SCLB, GNPS **ISP:** ENS, STS

B. Four required policy courses

ECO 228 - Environmental and Natural Resource Economics

Course Units: 1.0 Economic causes of environmental degradation and natural resource depletion; benefit-cost analyses of public policies for environmental protection and natural resource preservation; specific issues in energy and wilderness resource management, air and water pollution abatement, and solid waste management. **Prerequisite(s):** ECO 101 or permission of instructor. **CC:** SOCS **ISP:** STS, ENS

and three from:

AAH 260 - Nature, Art, and the Environment

Course Units: 1.0 This course studies attitudes toward nature in Western Europe and North America from the Middle Ages through the 20th century. We will be examining cultural and artistic ideas related to the natural world, noting both continuity and change. In keeping with the interdisciplinary nature of the course, we will be examining such diverse sources as religion, literature and the printed book, gardens and landscape art, painting and printmaking, the history of botany, botanical art and scientific illustration, exploration and travel, climate and geography, agriculture and industrialization, and the development of "ecology". **CC:** HUM **ISP:** ENS

AAH 265 - Environmentalism and Globalization in Contemporary Art

Course Units: 1.0 This course examines artistic practices that meld science, aesthetics, and politics in imaginative and critical ways as they address environmentalism and globalization. The course primarily focuses on 21st century artists whose work takes on such subjects as pollution, biodiversity, sustainability and climate change. We will consider the blurring of the boundaries between art and activism and the many art genres and strategies used to address these issues from photography and sculpture to community collaborations and public art. **CC:** HUM, GCAD, GCHF, GSPE **ISP:** AMS, ENS, STS

ANT 241 - Environmental Anthropology

Course Units: 1.0 This course examines anthropological approaches to the environment and environmentalism. It asks questions such as: How does culture shape our perception of nature? What can conflicts over environmental protection, natural resources and human manipulations of natural materials tell us about contemporary societies? What does it mean to call an issue "political" or "cultural," versus "scientific" or "technical"? Students will develop the critical analysis skills to examine the natural world as a site of cultural politics, using anthropological concepts to examine environmentalism in diverse geographical and historical settings, including the Amazon, the Niger Delta, the suburban mall, and the Union campus. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** ENS, STS

CLS 153 - The Environment in the Ancient World

Course Units: 1.0 Students will discover how ancient Mediterranean societies interacted with the natural world, as revealed by history, art and literature, and archaeology. Some of the questions we will investigate include: how did the Mediterranean environment affect and determine everyday life, both in cities and in rural areas? How did ancient societies manage their food supply? What was their view of nature? How did they react to ecological crisis? And, finally, how can we use their outlook on and treatment of the environment to inform our own approach? **CC:** HUM, LCC, GCHF **ISP:** ENS, STS

CLS 191 - Ancient Engineering

Course Units: 1 How did people living in the ancient Mediterranean region physically transform the world around them, and what do those transformations tell us about their values and beliefs? We'll examine major engineering successes (and failures) such as temples, aqueducts, catapults, and more, using multiple forms of evidence, from archaeology, visual imagery, and inscriptions, to re-enactment and 3D modeling. **CC:** HUM, GETS **ISP:** ENS

EGL 280 - Nature and Environmental Writing

Course Units: 1.0 This course will focus on the traditions of nature and environmental writing in the American context, with an emphasis on the social and cultural dynamics of the environment and environmental action. Among other questions, we will ask ourselves: How do class, gender, and race enter into the nexus of social interactions that shape our environment? What is the place of literature in community, literacy, and environmental activism? What are the connections between the ways we speak and write about the environment and our actions toward the environment? How does the wilderness concept affect the ways citizens have access to public spaces? We will consider the concept of "nature" as we move through the course, culminating (if you like) with some nature writing of your own. Readings may include Thoreau; Carson; Leopold; Kingsolver, and selections from *Reading the Roots: American Nature Writing Before Walden*; *Colors of Nature*; Lauret Savoy, T*race: Memory, History, and the American Landscape*; and F. Marina Schauffler, *Turning to Earth: Stories of Ecological Conversion.* **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, ENS, STS

EGL 281 - Environmental Psychology and the American Literary Landscape

Course Units: 1.0 Environmental research psychologist Maria Vittoria Giuliani emphasizes that human-to-place attachments "not only permeate our daily life but very often appear also in the representations, idealizations and expressions of life and affect represented [in] literature." Indeed, many literary works emphasize humanity's basic attachment needs and the importance person-to-place bonds have in the development of the human psyche. American fiction writers frequently employ descriptions of American landscapes as inspiration for character and plot development, and American nature writers often emphasize the way in which wilderness environments may influence one's mental and physical health and emotional well-being. In fact, recent studies in the field of cognitive neuroscience provide empirical evidence to substantiate the theory that exposure to a natural environment may actually generate structural changes in the brain by increasing oxygenation and blood flow that occur in response to neural activity. Hence, this course will employ contemporary studies in place attachment, environmental psychology, and cognitive neuroscience to examine the way in which various literary works illustrate the important role environment plays in aiding or obstructing one's ability to think, reason, remember, problem-solve, process information, use language, or be creative. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, ENS

ENS 242 - Comparative Climate Change Politics

Course Units: 1 This past year we have seen historic temperature records and heatwaves across the globe, the impacts of wildfires around the country and locally, and periods of drought and
extreme storms in different areas. These have been attributed to or amplified by anthropogenic climate change, which is one of the biggest challenges facing society in
the 21 st century. This course examines why climate change is such a "wicked problem", and why it is so difficult to address effectively. The barriers to addressing climate change are not just technical and scientific, but also political and social. Thinking about a future where we as a society mitigate the worst impacts of climate change this century, and adapt to other impacts entails navigating different political systems around the world and balancing various geopolitical and economic interests. Through this course, we will examine how these factors shape or constrain efforts to address climate change in Western Europe, the United States, China, India, and other parts of the world. We will also examine how climate change is impacting human life and security in these countries and other parts of the world, and how it may amplify existing inequalities and other crises. **ISP:** ENS

ENS 263 - U.S. Environmental Policy

Course Units: 1 This course examines the emergence, development, and future directions of environmental policy within the United States. It covers early environmental policy achievements such as the Clean Air Act, the reasons for federal inaction on environmental policy since the 1990s, and new directions for policy action in the 21st century as society understands how to mitigate and adapt to climate change. **CC:** LCC, SOCS **ISP:** AFR, AMS, ENS

ENS 302 - U.S. Energy Policy

Course Units: 1 Transitions to zero-carbon sources of energy are a critical part of addressing climate change globally. Within various parts of the United States, this transition has been slow and involved a number of political conflicts. Fossil fuel corporations, energy interest groups, and several other actors have fought over the direction of energy policy, with these battles largely occurring at the state and local levels. This class explores these relationships and conflicts to understand the battles over a clean energy transition in the United States and the implications for addressing climate change. **Cross-Listed:** PSC 302 **CC:** SOCS **ISP:** ENS, STS

HST 225 - American Environmental History

Course Units: 1.0 This course aims to give students the knowledge and the tools to think critically about how history has shaped the present state of the earth and human relationships with it. It focuses on the history of man's interaction with nature on the North American continent, with a particular focus on the area that would become the United States, from precolonial times until the present. **CC:** SOCS **ISP:** AMS, ENS

HST 229 - The Adirondacks and American Environmental History

Course Units: 1.0 The Adirondack region of northern New York Slate has been a proving ground for shifting American attitudes toward the environment, from early colonial (ears of wilderness, to intensive resource exploitation, and to efforts to conserve natural resources and preserve distinctive wilderness areas. This course will examine Adirondack environmental history and place it in the context of broader American environmental history. It will leverage Union College's proximity to the region, and the resources of the Union College Kelly Adirondack Center, to offer students both intellectual and experiential engagement with the history of this distinctive place. **CC:** SOCS **ISP:** AMS, ENS, STS

- PHL 272 - Sustainability Theory & Practice

PHL 273 - Environmental Ethics

Course Units: 1.0 An exploration of the ethical and philosophical ideas that have shaped attitudes toward the environment and toward non-human species. **CC:** HUM **ISP:** ENS, STS

PSC 260 - Policy Making and American Society

Course Units: 1.0 The process through which public policies are originated, shaped, adopted, and applied at all levels of government in the U.S. and the impact of public policies on American society. Policies such as crime, immigration, gay rights, abortion, the environment, smoking, and others are used as case studies to examine the policy process. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS

PSC 283 - Social Movements, the Environment and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** SOC 270 **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **ISP:** AMS, ENS, STS

SOC 260 - Population and Society: Demographic Trends

Course Units: 1.0 An introduction to the study of human populations and the dynamics of birth, death and migration. Focus on how populations grow and decline and the implications for social policy in areas such as health, aging, social inequality, the environment, immigration and urban life. **Prerequisite(s):** SOC 100 **ISP:** ENS

SOC 270 - Social Movements, the Environment, and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** PSC 283 **Prerequisite(s):** SOC 100 **ISP:** AMS, ENS, STS

SOC 271 - Sociology of Disaster

Course Units: 1.0 This course is an introduction to the sociological analysis of disasters. We will consider how sociologists conceptualize and theorize about disasters and the social and physical damage, death and injury, and economics loss they involve. Variations in the vulnerability of communities and particular social groups to such events will also be examined. **Prerequisite(s):** SOC 100 **ISP:** ENS

SOC 359 - Environmental Policy and Resource Management

Course Units: 1.0 An examination of environmental issues and problems such as acid rain, ocean dumping, and nuclear wastes, and the social forces that shape environmental policies. Students complete an internship with an environmental service theme. **CC:** SOCS **ISP:** ENS, STS

C. One quantitative methods and spatial analysis course

One course from

ECO 243 - Introduction to Econometrics

Course Units: 1.0 Descriptive statistics, probability, random variables and their distributions, sampling, statistical inference including confidence interval estimation, hypothesis testing, and regression analysis. Introduction to economic research using statistical methods to test theories. **Prerequisite(s):** ECO 101 **Prereq/Corequisite(s):** A minimum grade of C in ECO-243 is required to register for ECO 498 **CC:** SOCS **ISP:** ENS

ENS 204 - Geographic Information Systems

Course Units: 1.0 An introduction to Geographic Information Systems (GIS) technology and its practical uses. Topics include history of GIS, geographic data types, primary data structures, system design, map coordinate systems, data sources, metadata, census data, geographic coding and address matching, digitizing, remote sensing imagery, measures of data quality, and needs assessment. An emphasis will be on hands-on instruction using GIS software (ArcView). Students will work with ArcView throughout the term to complete assignments and a class project. Focus areas include

archeology, electric and gas utilities, surveying, health and human services, insurance, law enforcement and criminal justice, media and telecommunications, transportation, water and wastewater, and natural resources. The ultimate goal is to use the spatial component of data in conducting analysis and making decisions. **Prerequisite(s):** A good background in the use of modern computer software. **Corequisite(s):** ENS 204L **CC:** SET, GETS **Lecture/Lab Hours** Two class hours and two lab hours weekly. **ISP:** ENS, STS

ENS 215 - Exploring Environmental Data

Course Units: 1.0 Understanding how the Earth and environment works requires the careful analysis and interpretation of scientific data. Increasingly, the limitations to our understanding lie not in the availability of data, but rather in our ability to analyze and find meaning in it. Deriving insight from environmental data, in particular large and complex datasets, requires new tools, methods, and ways of thinking. In this class we are going to learn how to code in the programming language R and use it to analyze environmental data in order to better understand the Earth's systems. This course will feature a hands-on classroom with programming and data analysis occurring interactively during the class. Students will learn how to analyze and visualize large datasets and how to write code, while also covering interesting components of environmental and Earth sciences. **Prerequisite(s):** Any SET or SCLB. **CC:** SCLB, QMR, GDQR **Lecture/Lab Hours** Weekly lab required. **ISP:** ENS

PSC 220 - Social Data Analysis

Course Units: 1.0 The analysis of social science data. Emphasis on testing substantive hypotheses by means of computer data processing and statistical techniques. **Cross-Listed:** SOC 201 **Prerequisite(s):** Any introductory social science course; a background in math is not necessary. **CC:** QMR, SOCS **ISP:** ENS

PSY 200 - Statistical Methods in Psychology

Course Units: 1.0 The descriptive and inferential statistical procedures used by researchers to explain and analyze their results. Mean, variance, correlation, hypothesis testing using t-test, ANOVA, and nonparametric tests. **Prerequisite(s):** PSY 100 , PSY 210 / BIO 210 or (BIO 103 and BIO 104) **ISP:** ENS

SOC 201 - Social Data Analysis

Course Units: 1.0 The analysis of social science data. Emphasis on testing substantive hypotheses by means of computer data processing and statistical techniques. **Cross-Listed:** PSC 220 **Prerequisite(s):** SOC 100 **CC:** QMR, SOCS **ISP:** ENS

SOC 300 - Quantitative Methods of Social Research

Course Units: 1.0 Identifying sociopolitical questions and developing hypotheses; designing research instruments (questionnaires); basic statistics and introduction to social science computer analysis. **Prereq/Corequisite(s):** SOC 100 **CC:** SOCS, JDQR, JSPE **ISP:** ENS

STA 104 - Introduction to Statistics

Course Units: 1.0 This course is intended to provide the conceptual foundations, and also analytical skills, for students to be able to quantify uncertainty, and further, to make rational decisions in the face of uncertainty. It addresses collection of high-quality data, basic statistical analysis of such data, including use of computer software, and drawing actionable conclusions from analyses. These conclusions include understanding the limitations of statistical analyses. The integration of subject matter knowledge with data analysis within the sequential cycle of scientific inquiry will be emphasized. This course is also intended to prepare students for more advanced statistics courses, such as those in experimental design or regression analysis. **Prereq/Corequisite(s):** This course is designed for first year students and

sophomores, and preference will be given to such students in accepting petitions. Not open to students who have passed STA 064, STA 164, STA 264, MTH 115 , MER 301, IMP 120 , ECO 243 or PSY 200 **CC:** QMR, JDQR **ISP:** ENS

STA 164 - Strategies of Experimentation: Statistical Design and Analysis of Experiments

Course Units: 1.0 Experimentation is at the heart of the scientific method, both in the physical and social sciences. Not only do experiments validate or disprove existing hypotheses, but often unexpected results lead to the development of new hypotheses and new theoretical understanding. This course will focus on strategies to accelerate the scientific method when experimenting with multiple variables. Specific topics include design options, such as simple comparative experiments, factorials and fractional factorials, and response surface designs, as well as analysis methods such as graphical methods, analysis of variance, and regression models. **Prerequisite(s):** One of STA 104 ,STA 128 /MTH 128 , STA 264 , STA228/MTH 228 , MER 301, ECO 243, PSY 200 or permission from the Chair. **CC:** QMR **ISP:** ENS

STA 264 - Regression Analysis

Course Units: 1.0 Regression analysis is one of the most important and influential methods in statistics, finding application in virtually all disciplines, from business to healthcare to sociology to the hard sciences. This course will cover both the science of regression analysis - its underlying mathematical theory, as well as the art of its practical application. The course project will involve development of a regression model to fit a real data set. Lectures will be given primarily in matrix notation, i.e., using linear algebra. While the course will not be all-encompassing in itself due to time constraints, it would be good preparation for more advanced modeling courses involving data mining, machine learning, "Big Data", and so on. Prior understanding of statistical concepts is assumed **Prerequisite(s):** MTH 115 and one of STA 104 , ECO 243, STA 164 , PSY 200, MER 301 or permission from the Chair. **ISP:** ENS

D. Three required science courses

Required Course:

BIO 103 - Diversity of Life: Heredity, Evolution, and Ecology

Course Units: 1.0 More than 3.5 billion years of evolution have resulted in the astonishing diversity of life on earth. This course will explore biodiversity through the lens of ecology, evolution, and heredity, and will investigate various topics, including: the history of life on Earth, evolutionary change, Mendelian & non-Mendelian inheritance, as well as human impacts on biodiversity and ecological functioning. These processes will be studied in the lab using animal model systems, computer simulations, observations of diversity, and molecular techniques. Students will learn experimental design, data analysis, scientific writing, and various laboratory skills during weekly lab sessions. **Corequisite(s):** BIO 103L **CC:** SCLB, GNPS **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 104. **ISP:** ENS

Choose one from the following:

BIO 320 - Ecology w/lab

Course Units: 1.0 Organisms and their environment, population and community ecology, and the structure and integration of ecosystems will be discussed along with a focus on animal community ecology. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 320L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS **Note:** There may be field trips requiring scheduling outside of normal class time.

BIO 322 - Conservation Biology w/lab

Course Units: 1.0 Natural ecosystems have suffered from declining biodiversity and encroaching human development. In this course, you will examine how these alterations impact populations and ecosystems and will evaluate management strategies designed to facilitate long-term sustainability. Topics include genetics and population biology of rare species, threats to biodiversity and adaptive ecosystems management. **Prerequisite(s):** BIO 103 and BIO 104 or permission of instructor. **Corequisite(s):** BIO 322L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 324 - Plant Ecology w/lab

Course Units: 1.0 Examines the factors that affect the distribution and abundance of plants including the availability of water or nutrients, interactions with neighboring plants or animals, and the frequency of disturbances such as fires. Topics also include such environmental issues as climate change, exotic species invasions, the conservation of rare species, and the benefits of urban nature for human health. The weekly lab includes field excursions and quantitative data analysis. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 324L **CC:** SCLB, WAC-R, GDQR, GNPS **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 350T - Terrestrial Ecology of Australia

Course Units: **CC:** SET **ISP:** ENS

GEO 305 - Global Biogeochemical Cycles

Course Units: 1.0 Biology, geology and chemistry are intricately linked to form the world around us. Biogeochemical cycles set the stage for life on Earth. This course explores the carbon, nitrogen, water, phosphorus, and sulfur cycles in the critical zone and oceans. The critical zone is the terrestrial layer that extends from the bedrock to the top of vegetation, and this course continues into estuaries and the open ocean. We investigate how biological (e.g., primary production, respiration), anthropogenic (e.g., urbanization, pollution) and geological processes (e.g., tectonics, rock weathering) influence the critical zone and oceans, and in turn how these cycles influence life and climate. Field studies focus on tropical marine biogeochemistry of coral reefs, mangrove forests, seagrass meadows, lagoons and estuaries. Course includes a required week-long field trip to a remote field station in Panama. There are additional costs associated with field trip expenses, but students can apply for travel assistance. All students must meet basic term abroad requirements and submit an application. This course is open to all students, but preference will be given to those with a declared major in geosciences, environmental science, chemistry, or biology. **Cross-Listed:** BIO 235 **Corequisite(s):** GEO 305L **Prereq/Corequisite(s):** Take a course from either BIO, CHM, GEO or ENS 100 . **CC:** WAC, WAC-R **ISP:** ENS

Choose one from the following:

GEO 106 - Introduction to Oceanography

Course Units: 1.0 The oceans cover 71% of the planet, 97% of the earth's available water, and 50% of the planet's species, but more than 95% of the ocean remains unexplored. This course covers physical, chemical, and biological oceanography. The course involves an examination of plate tectonics, ocean currents and the forces driving them, the role of the oceans in climate change, coastal processes and sea level change, biological productivity, and the ocean fishing industries. **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 109 - Global Climate Change

Course Units: 1.0

Global climate change is the defining environmental issue of our time. The impacts of climate change disproportionally affect populations who have contributed the least to atmospheric greenhouse gas loading. This course will review the basis for the overwhelming scientific consensus that ongoing warming is not natural; topics include: the

radiation balance of Earth, the role of greenhouse gases on Earth's surface temperature, atmospheric and oceanic circulation, and natural oscillators in the climate system. A significant portion of the course is dedicated to understanding natural climatic variability. Students will prepare and submit policy briefs to policy makers at the federal, state, and/or local level that outline ways to mitigate and/or adapt to climate change. Preference given to first and second year students. **Corequisite(s):** GEO-109L
CC: SET, GNPS **ISP:** ENS, STS

GEO 110 - Introduction to Geosciences

Course Units: 1.0 Examination of Earth materials and processes: How our dynamic planet works including plate tectonics, geologic age determination, processes that form the rocks we see at the Earth's surface, development of the stunning variety of landscapes we see, and other topics of contemporary interest including floods, underground water resources, coastal erosion, earthquakes, landslides, volcanoes, and climate change. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 110L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 112 - Environmental Geology

Course Units: 1.0 The increasing interplay between the environment and human activity has profound effects on our landscape and society. This course focuses on anthropogenic issues such as climate change, soil and groundwater contamination, traditional petroleum resource extraction and dependence, mineral and water resources, and alterative sources of energy. To understand how humans have perturbed the natural environment, it is critical to understand geologic principles and processes. The course also explores natural disasters including earthquakes, volcanoes, hurricanes, landslides, floods, and coastal erosion and their effects on different segments of society, as the impacts of natural disasters are affected by various socio-economic factors. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 112L **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 115 - Intro to the Atmosphere

Course Units: 1 Weather and climate influence nearly every aspect of our lives, from tasks such as what clothes to wear to the spectacular sights of extreme events such as hurricanes and thunderstorms. However, human activities are increasingly altering the state of the atmosphere through the emission of greenhouse gasses and aerosols. In this course, we
will cover the foundational concepts of atmospheric science that are necessary to develop an intuitive understanding of weather and climate. We will then apply the basic principles
to explore the origins of extreme weather and global climate change. **Corequisite(s):** GEO 115L **CC:** GNPS **ISP:** ENS, STS,

GEO 117 - Natural Disasters

Course Units: 1.0 An introduction to the geologic processes causing floods, earthquakes, volcanoes, landslides, and other natural hazards and how hazards affect people and society. The course will include discussion of major events in the geologic and historical record as well as future hazard potential. We will assess the risks humans face in different regions, including local hazards, our contribution to geologic hazards, and how we can minimize and cope with future events. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 117L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 120 - The Story of Earth and Life

Course Units: 1.0 An investigation of Earth's dynamic history and evolutionary changes over the past 4.5 billion years. Topics include impacts of climate change, the evolution of life, major changes in the nature of Earth's atmosphere and oceans, and for major mountain building events that have affected the continents as well as the evolutionary

development of plant and animal life as recorded in the geologic record. Specific topics include the origin of life, mass extinctions of dinosaurs and other organisms, paleoclimate, and the geologic history of New York State. The link between geology, chemical cycles and life is highlighted, as is the relation of past biogeochemical changes to current global environmental change. Field trips during lab investigate local geologic history and the course may require a weekend field trip. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 120L **CC:** SCLB, GNPS, SET **ISP:** ENS, STS

GEO 160 - Environmental Challenges in the Mohawk Watershed

Course Units: 1.0 This courses in an introductory course that investigates the complex intersection of surface-water hydrology and society. Specific modules address hydrology in a changing climate, water quality, dams and the Erie Canal, invasive species and pathways, municipal drinking water, floods, and river-proximal development: all environmental problems on the Mohawk related to water and hydrology in the watershed. While the Mohawk Watershed is of local and regional interest, the issues and problems addressed in this course are applicable nationwide. They deal with how a changing climate affects surface-water hydrology, how our national infrastructure and the built environment has been stressed due to age, damaging extreme events and pollution. We explore how our relationship with rivers is changing. This course is intended for all students at Union College, but it will be of special interest to those students interested in water, especially in the context of rivers, climate change, water infrastructure, and urban planning and development. **Prerequisite(s):** Preference is fiven to first and second year students. **Corequisite(s):** GEO 160L **CC:** SCLB, GNPS, GETS, WAC **ISP:** ENS

E. Four upper level policy/humanities courses in an area of concentration

(No double counting from A-D, above). The following are suggested areas of concentration; alterations must be approved in writing by the ESPE Director.

Please Note: Up to two internships may be counted toward any of the tracks below, provided the subject of the internship is selected with that track in mind and approved in writing by both the relevant internship director and the ESPE Director; specific internships include:

- ANT 232T / ECO 232T - Fiji Culture and Entrepreneurship

ANT 490T - Anthropology Independent Study Abroad

Course Units: 1.0 Tutorial for individual students. **ISP:** ENS

ECO 390 - Economics Internships

Course Units: 1.0 Designed to involve students in the operation of various economic agencies, commissions in New York State government and private firms. Interns apply skills to practical problems in economic analysis and gain exposure to the functioning of the agency or firm. **Prerequisite(s):** ECO 241 , ECO 242 , and ECO 243 **CC:** SOCS **ISP:** ENS

LAS 200T - Women, Environment, Social Change

Course Units: 1.0 **ISP:** ENS, GSWS

PSC 277 - Capital Region Political Internships

Course Units: 1.0 This class enables students to become politically active and/or gain political experience by working for elected officials, government agencies, election campaigns, interest groups, non-profit organizations, lobby firms,

etc. Students draw on their internship experience and related academic work to reach a better understanding of the complexities and dynamics of politics at the state or local level. Students are permitted to enroll in this course twice, although the course will count toward the Political Science major only once. **Prerequisite(s):** Sophomore standing and permission of the instructor. **CC:** SOCS **ISP:** AMS, ENS **Note:** This course does not count towards the PSC portion of an ID major.

- PSC 279T - Term in Washington D.C. Project

SOC 385 - Internships for Community Outreach

Course Units: 1.0 Designed to provide the student with work and research experience within a human service organization. **CC:** SOCS, WAC-R **ISP:** ENS

Environmental Law and Management

CLS 153 - The Environment in the Ancient World

Course Units: 1.0 Students will discover how ancient Mediterranean societies interacted with the natural world, as revealed by history, art and literature, and archaeology. Some of the questions we will investigate include: how did the Mediterranean environment affect and determine everyday life, both in cities and in rural areas? How did ancient societies manage their food supply? What was their view of nature? How did they react to ecological crisis? And, finally, how can we use their outlook on and treatment of the environment to inform our own approach? **CC:** HUM, LCC, GCHF **ISP:** ENS, STS

ENS 208 - Waste Management and Recycling

Course Units: 1.0 This course will introduce students to various sources of solid waste materials including hazardous and nonhazardous waste, and biodegradable and non-biodegradable waste. Focus areas are overview of landfill systems, geosynthetics, geotextiles, geomembranes, geonets, single clay liner, single geomembrane liner, composite liner systems, leak detection and leachate collection, removal and treatment of leachate, and capping and closure systems. The recycling segment will explore natural resources of raw materials including origin and use. It will also investigate the potential and limitation for recycling of materials. The focus area will be various applications of recycling recyclable and nonrecyclable materials especially non-biodegradable waste. Discussion of methods of manufacture and compositions of such materials will concentrate on advanced industrial applications for the reuse of non-recyclable waste materials. Application areas include production of new materials, materials with superior qualities for special purposes, and materials with high level of resistance against certain environmental conditions. The course will also touch on the political aspect of recycling including consumer attitude and government incentives to encourage recycling. **Prerequisite(s):** ENS 100 or GEO 110 **CC:** SET, GETS **ISP:** ENS, STS

ENS 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on earth and is a vital source of water for household, industrial, and agricultural uses worldwide. The well-being and prosperity of human civilization requires the sound stewardship and sustainable use of our groundwater supplies. In addition to serving as an essential resource for humanity, groundwater plays a central role in many environmental and geologic processes, including the maintenance of river flows between rainfall events, the occurrence of earthquakes, and the genesis of certain types of ore deposits and landforms. Groundwater is also a key consideration in many engineering operations such as the construction of dams and tunnels and the assessment of landslide and land subsidence risk. Groundwater hydrology is a highly interdisciplinary field that brings together the geologic and environmental sciences with engineering. This course will begin by exploring the physical properties of groundwater and the geologic media through which it flows, the physical laws that govern groundwater flow and transport, and techniques for modeling groundwater flow patterns. The mid-part of the course will focus on the engineering aspects of groundwater, covering topics such as the hydraulics

of pumping wells, the transport of contaminants within aquifers, the remediation of contaminated aquifers, and well-drilling technology. Later we will cover the role groundwater plays in geologic processes and the role of geology in determining groundwater chemistry and quality. We will also discuss the connections between groundwater and human health and the importance of groundwater in the global food supply. Students will leave this course with the fundamental knowledge needed to begin answering scientific and engineering questions in the fascinating world of groundwater hydrology. **Cross-Listed:** GEO 210 **Prerequisite(s):** ENS 100 or any GEO course numbered 110 or higher. **CC:** GDQR, GETS, GNPS **Lecture/Lab Hours** One lab per week. **ISP:** ENS

ENS 215 - Exploring Environmental Data

Course Units: 1.0 Understanding how the Earth and environment works requires the careful analysis and interpretation of scientific data. Increasingly, the limitations to our understanding lie not in the availability of data, but rather in our ability to analyze and find meaning in it. Deriving insight from environmental data, in particular large and complex datasets, requires new tools, methods, and ways of thinking. In this class we are going to learn how to code in the programming language R and use it to analyze environmental data in order to better understand the Earth's systems. This course will feature a hands-on classroom with programming and data analysis occurring interactively during the class. Students will learn how to analyze and visualize large datasets and how to write code, while also covering interesting components of environmental and Earth sciences. **Prerequisite(s):** Any SET or SCLB. **CC:** SCLB, QMR, GDQR **Lecture/Lab Hours** Weekly lab required. **ISP:** ENS

ENS 242 - Comparative Climate Change Politics

Course Units: 1 This past year we have seen historic temperature records and heatwaves across the globe, the impacts of wildfires around the country and locally, and periods of drought and
extreme storms in different areas. These have been attributed to or amplified by anthropogenic climate change, which is one of the biggest challenges facing society in
the 21 st century. This course examines why climate change is such a "wicked problem", and why it is so difficult to address effectively. The barriers to addressing climate change are not just technical and scientific, but also political and social. Thinking about a future where we as a society mitigate the worst impacts of climate change this century, and adapt to other impacts entails navigating different political systems around the world and balancing various geopolitical and economic interests. Through this course, we will examine how these factors shape or constrain efforts to address climate change in Western Europe, the United States, China, India, and other parts of the world. We will also examine how climate change is impacting human life and security in these countries and other parts of the world, and how it may amplify existing inequalities and other crises. **ISP:** ENS

ENS 263 - U.S. Environmental Policy

Course Units: 1 This course examines the emergence, development, and future directions of environmental policy within the United States. It covers early environmental policy achievements such as the Clean Air Act, the reasons for federal inaction on environmental policy since the 1990s, and new directions for policy action in the 21st century as society understands how to mitigate and adapt to climate change. **CC:** LCC, SOCS **ISP:** AFR, AMS, ENS

ENS 299 - Environmental Forensics

Course Units: 1.0 An interdisciplinary course that will present topics detailing the intersection between the environment, ethics, law, society, litigation, policy, economics, pollution/contamination, cleanup, testing, standards, and sustainability. Sources of environmental problems are usually related to emissions, pollution, contamination, and/or waste disposal. Whether the cause is intentional or non-intentional, natural factors or a man-made disaster, or due to normal operation or accident, a crisis ensues and cleanup becomes necessary. This inevitably leads to legal actions and litigations that rely on experts in conducting scientific investigations to establish the facts surrounding potential controversies. Topics discussed in the course include liability, environmental site assessment, insurance litigation, toxic torts, science tools, sampling & measurements, statistical analysis, chemical fingerprinting, contaminant transport

models, and environmental forensic microscopy. The course will illustrate the above points using case studies. **CC:** SET, GETS, WAC **ISP:** ENS, STS

ENS 302 - U.S. Energy Policy

Course Units: 1 Transitions to zero-carbon sources of energy are a critical part of addressing climate change globally. Within various parts of the United States, this transition has been slow and involved a number of political conflicts. Fossil fuel corporations, energy interest groups, and several other actors have fought over the direction of energy policy, with these battles largely occurring at the state and local levels. This class explores these relationships and conflicts to understand the battles over a clean energy transition in the United States and the implications for addressing climate change. **Cross-Listed:** PSC 302 **CC:** SOCS **ISP:** ENS, STS

GEO 109 - Global Climate Change

Course Units: 1.0

Global climate change is the defining environmental issue of our time. The impacts of climate change disproportionally affect populations who have contributed the least to atmospheric greenhouse gas loading. This course will review the basis for the overwhelming scientific consensus that ongoing warming is not natural; topics include: the radiation balance of Earth, the role of greenhouse gases on Earth's surface temperature, atmospheric and oceanic circulation, and natural oscillators in the climate system. A significant portion of the course is dedicated to understanding natural climatic variability. Students will prepare and submit policy briefs to policy makers at the federal, state, and/or local level that outline ways to mitigate and/or adapt to climate change. Preference given to first and second year students. **Corequisite(s):** GEO-109L
CC: SET, GNPS **ISP:** ENS, STS

GEO 209 - Paleoclimatology

Course Units: 1.0 Climate is fundamentally relevant to modern and ancient societies. Global warming is occurring today, and whether it is driven by human activities (e.g., CO2, CH4 emissions) or by natural climate cycles can only be determined by understanding natural climatic variability. Fortunately, there are many tools, and natural climatic records that can provide us with information on past climate (e.g. tree rings, ice cores from glaciers, and sediment cores from lakes and oceans). Obtaining, documenting and interpreting these records is the field of paleoclimatology, and it is the focus of this course. Past climate variability is used to highlight possible scenarios of future climate change. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 209L **CC:** SCLB **ISP:** ENS

GEO 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on Earth and serves as a vital resource that supports the economies and ecosystems of the world - including providing much of the irrigation water that grows our food, supplying drinking water to over 2 billion people, and sustaining surface water bodies and groundwater dependent ecosystems. With the world's groundwater resources threatened by intensive groundwater pumping, environmental and climate change, and the release of contaminants into the environment, there is a pressing need to better understand and manage this resource. Groundwater hydrology is a highly interdisciplinary field that brings together the geologic and environmental sciences with engineering. This course will begin by exploring the environmental and geologic factors that influence the occurrence and movement of groundwater. We will then delve into the physical laws the govern groundwater flow and learn how to model these flows. Later in the course we will cover the role of groundwater in a range of geologic and ecological processes. We will also cover engineering applications of groundwater such as the hydraulics of pumping wells, land subsidence, and the movement of contaminants within aquifers. Students will leave this course with the fundamental knowledge needed to begin answering the scientific and engineering challenges related to our groundwater resources. **Cross-Listed:** ENS

210 **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 210L **CC:** GDQR, GETS, GNPS **ISP:** ENS

GEO 355T - Living on the Edge

Course Units: 1.0 This course is a mini-term abroad. The field study of earthquakes, volcanoes, glaciers, and other hazards where tectonic plates collide and mountains form. Field studies focus on understanding the science behind geologic hazards that lead to catastrophic events and subsequent loss of life. Fieldwork is aimed at recognizing hazards, understanding the processes behind the hazards, and to see the role that society plays in mitigating these hazards. The study area alternates around the Pacific Rim between locations that include Peru (June), Alaska (June), and New Zealand (December). Fieldwork is preceded by organizational sessions on campus to prepare for field projects. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **ISP:** ENS

HST 109 - History of Sustainability

Course Units: 1.0 Sustainability. You now find the word just about everywhere. For more than a few people it has become the defining mission of their generation, an existential challenge that must be met for the survival of humanity. This is a course in thematic global history that explores the concept of sustainability from an historical perspective. Sustainability is not a new thing in human history or just a consequence of our environmentally-challenged present. Sustainability is part of our cultural inheritance with deep roots in the histories of Asia, the Americas, Europe, and Africa. Also, sustainability is not simply synonymous with environmentalism or climate change. It has always encompassed social realities like power, trade and commerce, cultural identities, human relationships to science and technology, and much more. Sustainability is a history of the societies we create and the values that define them, for good or ill. Ultimately, the history of sustainability is an opportunity to reflect on the nature of our humanity and the ideals that empower a just future. We will explore sustainability's history through primary texts, analyses of the concept across time and space, the study of sustainability challenges - successes and failures - in past societies, and contemporary realties faced by peoples across the globe, whether in the megacities of China and Latin America or the urban gardens of Detroit and the green housing cooperatives of Berlin. **CC:** LCC, SOCS, GCHF **ISP:** ENS

HST 138 - Big History

Course Units: 1.0 An exploration of the past from the big bang to the present, dividing the history of the universe, earth, life, and humanity into periods using very large scales of time. **CC:** SOCS, GCHF **ISP:** ENS, STS

HST 206 - Environmental Histories of Empire

Course Units: 1.0 This course will explore histories of empire in comparative perspective. It provides students with an introduction to global environmental history by focusing on the changing relationships between people and their natural environments. It takes a transnational approach, exploring various case studies drawn from different imperial settings and temporalities. We will look at the development of early states, the growth of the capitalist world economy in the Atlantic, successive periods of empire-building in Africa and Asia, new forms of resource extraction and changing commodity flows, and environmental politics, while placing the natural world at the center of our analysis. In this course, we will use a more expansive definition of imperialism to include not only formal territorial empires, but also informal economic ones and various post-colonial forms of domination. Other themes to be explored will be: changing perceptions of the natural world, industrialization, warfare, urbanization, technological transformations, and changes in production and consumption. The goal is that students will develop of better understanding of the modern world and the ways in which humans have radically changed their natural environments. **CC:** LCC **ISP:** AFR, ENS

HST 225 - American Environmental History

Course Units: 1.0 This course aims to give students the knowledge and the tools to think critically about how history has shaped the present state of the earth and human relationships with it. It focuses on the history of man's interaction with nature on the North American continent, with a particular focus on the area that would become the United States, from precolonial times until the present. **CC:** SOCS **ISP:** AMS, ENS

HST 229 - The Adirondacks and American Environmental History

Course Units: 1.0 The Adirondack region of northern New York Slate has been a proving ground for shifting American attitudes toward the environment, from early colonial (ears of wilderness, to intensive resource exploitation, and to efforts to conserve natural resources and preserve distinctive wilderness areas. This course will examine Adirondack environmental history and place it in the context of broader American environmental history. It will leverage Union College's proximity to the region, and the resources of the Union College Kelly Adirondack Center, to offer students both intellectual and experiential engagement with the history of this distinctive place. **CC:** SOCS **ISP:** AMS, ENS, STS

HST 299 - The Nuclear Age

Course Units: 1.0 The nuclear age began with the discovery of radioactivity on the eve of the twentieth century and continues on to the present. The technology people have created to study and exploit the energy and particles released by nuclei, including nuclear weapons and nuclear power, but also many other applications in industry and medicine, have defined this age. This course will survey these economic, political, social, and cultural problems facing mankind: the proliferation of nuclear weapons, and human-induced climate change. **CC:** SOCS, GCHF, GETS, WAC **ISP:** ENS, STS

PHL 273 - Environmental Ethics

Course Units: 1.0 An exploration of the ethical and philosophical ideas that have shaped attitudes toward the environment and toward non-human species. **CC:** HUM **ISP:** ENS, STS

PSC 260 - Policy Making and American Society

Course Units: 1.0 The process through which public policies are originated, shaped, adopted, and applied at all levels of government in the U.S. and the impact of public policies on American society. Policies such as crime, immigration, gay rights, abortion, the environment, smoking, and others are used as case studies to examine the policy process. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS

PSC 242 - Comparative Climate Change Politics

Course Units: 1 This year we have seen historic temperature records and heatwaves across the globe, the impacts of wildfires around the country and locally, and periods of drought and extreme storms in different areas. These have been attributed to or amplified by anthropogenic climate change, which is one of the biggest challenges facing society in the 21st century. This course examines why climate change is such a "wicked problem," and why it is so difficult to address effectively. The barriers to addressing climate change are not just technical and scientific, but also political and social. Thinking about a future where we as a society mitigate the worst impacts of climate change this century, and adapt to other impacts entails navigating different political systems around the world and balancing various geopolitical and economic interests. Through this course, we will examine how these factors shape or constrain efforts to address climate change in Western Europe, the United States, China, India, and other parts of the world. We will also examine how climate change is impacting human life and security in these countries and other parts of the world, and how it may amplify existing inequalities and other crises. **ISP:** ENS, STS

PSC 263 - US Environmental Policy

Course Units: 1 This course examines the emergence, development, and future directions of environmental policy within the United States. It covers early environmental policy achievements such as the Clean Air Act, the reasons for federal inaction on environmental policy since the 1990s, and new directions for policy action in the 21st century as society understands. **ISP:** ENS, STS

PSC 272 - The Environment, Energy, and US Politics

Course Units: 1.0 Examination of how politics and policymaking affect the air we breathe, the water we drink, and the land we live on. This course will explore key U.S. environmental issues and their scientific underpinnings as well as the connections between these issues and our collective use of natural resources. The course will review major pieces of federal environmental law in the United States and address the policy considerations, justifications, and regulatory frameworks underlying them, as well as the effectiveness of these laws in achieving a healthier environment. The course will also examine the respective roles of Congress, the executive agencies, and the courts in determining environmental policy. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, STS

PSC 273 - The Supreme Court and Judicial Politics

Course Units: 1.0 An investigation of the judicial branch of government in the U.S. that focuses on the role of judges, the functioning of courts, and leading contemporary controversies in the judicial system. Among the primary concerns of this course are: the structure of the American Judiciary, judicial selection processes, how cases originate and move through the judicial system, how judges think about and reach decisions in the cases, and the role law plays in society. In exploring these topics many actual Supreme Court cases are dissected, focusing on such issues as: gay rights, pornography, rights of disabled citizens, the rights of those accused of crimes, and free speech over the Internet, to name only a few areas. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, LAW

PSC 302 - U.S. Energy Policy

Course Units: 1

Considers the protections afforded to individual rights and liberties by the U.S. Constitution and the Bill of Rights. Topics include freedom of speech and assembly, the right to privacy, religious freedom, equal protection and discrimination, and the due process rights of those accused of crimes. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **Cross-Listed:** ENS 302 **Prerequisite(s):** PSC 111 or PSC 112
CC: SOCS, JCHF, JSPE **ISP:** AMS, ENS, STS

SOC 240 - Political Sociology

Course Units: 1.0 Explores issues of political power, domination, and legitimacy from a sociological perspective. Topics include the creation and maintenance of political power and the impact of political socialization. **Cross-Listed:** PSC 284 **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AFR, AMS, ENS, LAW

SOC 260 - Population and Society: Demographic Trends

Course Units: 1.0 An introduction to the study of human populations and the dynamics of birth, death and migration. Focus on how populations grow and decline and the implications for social policy in areas such as health, aging, social inequality, the environment, immigration and urban life. **Prerequisite(s):** SOC 100 **ISP:** ENS

SOC 270 - Social Movements, the Environment, and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** PSC 283 **Prerequisite(s):** SOC 100 **ISP:** AMS, ENS, STS

Environmental Problems and Response

AAH 260 - Nature, Art, and the Environment

Course Units: 1.0 This course studies attitudes toward nature in Western Europe and North America from the Middle Ages through the 20th century. We will be examining cultural and artistic ideas related to the natural world, noting both continuity and change. In keeping with the interdisciplinary nature of the course, we will be examining such diverse sources as religion, literature and the printed book, gardens and landscape art, painting and printmaking, the history of botany, botanical art and scientific illustration, exploration and travel, climate and geography, agriculture and industrialization, and the development of "ecology". **CC:** HUM **ISP:** ENS

AAH 265 - Environmentalism and Globalization in Contemporary Art

Course Units: 1.0 This course examines artistic practices that meld science, aesthetics, and politics in imaginative and critical ways as they address environmentalism and globalization. The course primarily focuses on 21st century artists whose work takes on such subjects as pollution, biodiversity, sustainability and climate change. We will consider the blurring of the boundaries between art and activism and the many art genres and strategies used to address these issues from photography and sculpture to community collaborations and public art. **CC:** HUM, GCAD, GCHF, GSPE **ISP:** AMS, ENS, STS

ANT 241 - Environmental Anthropology

Course Units: 1.0 This course examines anthropological approaches to the environment and environmentalism. It asks questions such as: How does culture shape our perception of nature? What can conflicts over environmental protection, natural resources and human manipulations of natural materials tell us about contemporary societies? What does it mean to call an issue "political" or "cultural," versus "scientific" or "technical"? Students will develop the critical analysis skills to examine the natural world as a site of cultural politics, using anthropological concepts to examine environmentalism in diverse geographical and historical settings, including the Amazon, the Niger Delta, the suburban mall, and the Union campus. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** ENS, STS

AVA 345 - The Illustrated Organism

Course Units: 1.0 This studio course is the cross-section of common themes found in fine arts and biology, using art as a way of exploring science. The biological question of how evolution influences the relationship between structure and function will be addressed by exploring the use of color, light and structural logic with the goal of creating a world of your own. The course will culminate in an exhibition of artwork with corresponding texts by the student artists describing the connection between the art and science. Taught jointly by biology and visual arts. Apply through participating departments. **Cross-Listed:** BIO 345 **CC:** HUM, SCLB **ISP:** ENS

CLS 153 - The Environment in the Ancient World

Course Units: 1.0 Students will discover how ancient Mediterranean societies interacted with the natural world, as revealed by history, art and literature, and archaeology. Some of the questions we will investigate include: how did the Mediterranean environment affect and determine everyday life, both in cities and in rural areas? How did ancient societies manage their food supply? What was their view of nature? How did they react to ecological crisis? And,

finally, how can we use their outlook on and treatment of the environment to inform our own approach? **CC:** HUM, LCC, GCHF **ISP:** ENS, STS

EGL 271 - Dark Deeds: Crime in the Adirondacks

Course Units: 1.0 Merriam Webster defines a crime as an illegal act for which someone can be punished by the government; especially: a gross violation of law. A crime, however, is also defined in moral and ethical terms, as a grave offense, especially against morality; something reprehensible, foolish, or disgraceful. Students in this course will explore a variety of literary and historical illustrations of each of these types of crimes as they have occurred in the Adirondack Mountains throughout history. As we investigate various illegal acts in the Adirondacks, we will also examine underlying moral crimes, such as poverty and economic depression, which have the potential to lead individuals toward a life of crime. We will explore Chester Gillette's 1906 murder of Grace Brown at Big Moose Lake and the highly sensationalized murder trial that ensued, alongside Theodore Dreiser's 1925 novel that was based on the murder and criminal case. We will analyze the prison system in the Adirondacks, and we'll investigate various mobsters who stayed in Saratoga Springs during the Prohibition Era. We will also explore the crime of contagion as we read works written about tuberculosis and various sanatoriums in Saranac Lake. Part of our class time will be held at the Kelly Adirondack Center (KAC), working in the Adirondack Research Library. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, ENS, LAW

EGL 272 - Indigenous Sovereignty: Indigiqueer and Two-Spirit Voices

Course Units: 1.0 Students will consider literary works from several Native American writers who challenge white privilege and modes of possession. Texts will support place consciousness and tribal revitalization through an intergenerational awareness of intercultural dialogue. The course will focus on Indigenous counter-narratives that endeavor to dislodge the dominance of canonical white writers and, using a queer theoretical lens, will explore ways to reframe binary heteronormative practices.Course readings will focus on the consequences of dualistic thinking, colonization, and Eurocentric ideals. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **ISP:** ENS

EGL 280 - Nature and Environmental Writing

Course Units: 1.0 This course will focus on the traditions of nature and environmental writing in the American context, with an emphasis on the social and cultural dynamics of the environment and environmental action. Among other questions, we will ask ourselves: How do class, gender, and race enter into the nexus of social interactions that shape our environment? What is the place of literature in community, literacy, and environmental activism? What are the connections between the ways we speak and write about the environment and our actions toward the environment? How does the wilderness concept affect the ways citizens have access to public spaces? We will consider the concept of "nature" as we move through the course, culminating (if you like) with some nature writing of your own. Readings may include Thoreau; Carson; Leopold; Kingsolver, and selections from *Reading the Roots: American Nature Writing Before Walden*; *Colors of Nature*; Lauret Savoy, T*race: Memory, History, and the American Landscape*; and F. Marina Schauffler, *Turning to Earth: Stories of Ecological Conversion.* **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, ENS, STS

EGL 281 - Environmental Psychology and the American Literary Landscape

Course Units: 1.0 Environmental research psychologist Maria Vittoria Giuliani emphasizes that human-to-place attachments "not only permeate our daily life but very often appear also in the representations, idealizations and expressions of life and affect represented [in] literature." Indeed, many literary works emphasize humanity's basic attachment needs and the importance person-to-place bonds have in the development of the human psyche. American fiction writers frequently employ descriptions of American landscapes as inspiration for character and plot

development, and American nature writers often emphasize the way in which wilderness environments may influence one's mental and physical health and emotional well-being. In fact, recent studies in the field of cognitive neuroscience provide empirical evidence to substantiate the theory that exposure to a natural environment may actually generate structural changes in the brain by increasing oxygenation and blood flow that occur in response to neural activity. Hence, this course will employ contemporary studies in place attachment, environmental psychology, and cognitive neuroscience to examine the way in which various literary works illustrate the important role environment plays in aiding or obstructing one's ability to think, reason, remember, problem-solve, process information, use language, or be creative. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, ENS

ENS 208 - Waste Management and Recycling

Course Units: 1.0 This course will introduce students to various sources of solid waste materials including hazardous and nonhazardous waste, and biodegradable and non-biodegradable waste. Focus areas are overview of landfill systems, geosynthetics, geotextiles, geomembranes, geonets, single clay liner, single geomembrane liner, composite liner systems, leak detection and leachate collection, removal and treatment of leachate, and capping and closure systems. The recycling segment will explore natural resources of raw materials including origin and use. It will also investigate the potential and limitation for recycling of materials. The focus area will be various applications of recycling recyclable and nonrecyclable materials especially non-biodegradable waste. Discussion of methods of manufacture and compositions of such materials will concentrate on advanced industrial applications for the reuse of non-recyclable waste materials. Application areas include production of new materials, materials with superior qualities for special purposes, and materials with high level of resistance against certain environmental conditions. The course will also touch on the political aspect of recycling including consumer attitude and government incentives to encourage recycling. **Prerequisite(s):** ENS 100 or GEO 110 **CC:** SET, GETS **ISP:** ENS, STS

ENS 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on earth and is a vital source of water for household, industrial, and agricultural uses worldwide. The well-being and prosperity of human civilization requires the sound stewardship and sustainable use of our groundwater supplies. In addition to serving as an essential resource for humanity, groundwater plays a central role in many environmental and geologic processes, including the maintenance of river flows between rainfall events, the occurrence of earthquakes, and the genesis of certain types of ore deposits and landforms. Groundwater is also a key consideration in many engineering operations such as the construction of dams and tunnels and the assessment of landslide and land subsidence risk. Groundwater hydrology is a highly interdisciplinary field that brings together the geologic and environmental sciences with engineering. This course will begin by exploring the physical properties of groundwater and the geologic media through which it flows, the physical laws that govern groundwater flow and transport, and techniques for modeling groundwater flow patterns. The mid-part of the course will focus on the engineering aspects of groundwater, covering topics such as the hydraulics of pumping wells, the transport of contaminants within aquifers, the remediation of contaminated aquifers, and well-drilling technology. Later we will cover the role groundwater plays in geologic processes and the role of geology in determining groundwater chemistry and quality. We will also discuss the connections between groundwater and human health and the importance of groundwater in the global food supply. Students will leave this course with the fundamental knowledge needed to begin answering scientific and engineering questions in the fascinating world of groundwater hydrology. **Cross-Listed:** GEO 210 **Prerequisite(s):** ENS 100 or any GEO course numbered 110 or higher. **CC:** GDQR, GETS, GNPS **Lecture/Lab Hours** One lab per week. **ISP:** ENS

ENS 215 - Exploring Environmental Data

Course Units: 1.0 Understanding how the Earth and environment works requires the careful analysis and interpretation of scientific data. Increasingly, the limitations to our understanding lie not in the availability of data, but rather in our ability to analyze and find meaning in it. Deriving insight from environmental data, in particular large and complex datasets, requires new tools, methods, and ways of thinking. In this class we are going to learn how to code in the

programming language R and use it to analyze environmental data in order to better understand the Earth's systems. This course will feature a hands-on classroom with programming and data analysis occurring interactively during the class. Students will learn how to analyze and visualize large datasets and how to write code, while also covering interesting components of environmental and Earth sciences. **Prerequisite(s):** Any SET or SCLB. **CC:** SCLB, QMR, GDQR **Lecture/Lab Hours** Weekly lab required. **ISP:** ENS

ENS 222 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** MLT 209 **CC:** LCC, SET, HUM, HUL, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

ENS 234 - No Nonsense Sensors

Course Units: 1 Humans sense. They use their senses to monitor their surroundings. The basic five human senses are sight, hearing, smell, taste, and touch, and the sensory organs humans use to do these functions are the eyes, ear, nose tongue, and skin. Humans have had a long history of fascination with building devices that do sensory tasks. These are sensors, and unlike human sense, they are sleepless by design. The use of sensors has recently exploded. Sensor applications have penetrated many fields such as consumer products, healthcare, communication, transportation, industrial processes, sports, security, space, military, and the environment, to name a few. The presence of sensors is all around us in almost everything we use and come across in our daily life. Starting with smartphones, passing through sensor-activated lights in hallways, and ending with remotely sensed images that we receive from satellites orbiting Planet Earth from outer space. Sensors have invaded every aspect of human life and are predicted to be so pervasive in many extraordinary applications that will significantly enhance humans" quality of life. This course is designed for students interested in learning more about sensors and their human applications i adding a level of convenience never thought possible before. **CC:** SET, GETS **ISP:** ENS, STS

ENS 242 - Comparative Climate Change Politics

Course Units: 1 This past year we have seen historic temperature records and heatwaves across the globe, the impacts of wildfires around the country and locally, and periods of drought and
extreme storms in different areas. These have been attributed to or amplified by anthropogenic climate change, which is one of the biggest challenges facing society in
the 21 st century. This course examines why climate change is such a "wicked problem", and why it is so difficult to address effectively. The barriers to addressing climate change are not just technical and scientific, but also political and social. Thinking about a future where we as a society mitigate the worst impacts of climate change this century, and adapt to other impacts entails navigating different political systems around the world and balancing various geopolitical and economic interests. Through this course, we will examine how these factors shape or constrain efforts to address climate change in Western Europe, the United States, China, India, and other parts of the world. We will also examine how climate change is impacting human life and security in these countries and other parts of the world, and how it may amplify existing inequalities and other crises. **ISP:** ENS

ENS 247 - Sustainable Infrastructure

Course Units: 1.0 Infrastructure is the backbone of nations. It is a society's inventory of systems and facilities that allow it to function properly and smoothly. This includes, but is not limited to, roads, bridges, tunnels, dams, transit, waterways, ports, aviation, pipelines, transmission lines, rail, parks, and public buildings such as schools, courts, hospitals, and recreational and sport facilities. Infrastructure involves services such as energy, water supply, wastewater treatment, power and gas distribution grids, waste collection, and sewer disposal. Major advances in technology resulted in digital infrastructure that includes communication networks, signal transmission towers, data centers,

information repositories, servers/computers, and the Internet. This course explores the progress humanity achieved in developing infrastructure facilities and the present move towards sustainability. Methods, materials, processes, technologies, practices, and operations required to maintain a healthy environment and efficient infrastructure will be examined. The intersection between policies necessary for sustainable infrastructure and political, economic, social, societal, and cultural factors will be emphasized. **CC:** SET, GETS **Lecture/Lab Hours** Four class hours weekly. **ISP:** ENS, STS

ENS 253 - Environmentally Friendly Buildings

Course Units: 1.0 Many energy consumption and adverse environmental effects are attributable to buildings and their use. In this course, through instructions, hands-on experience, computer simulation, and research, the students will become acquainted with the inner workings of the subsystems in buildings: foundations, framings, walls, sidings, roof, electrical systems, lighting, appliances, heating, air-conditioning, ventilation, indoor air quality, basement, crawl space, attic, water and moisture management; plumbing, flooring, finishes, furniture, insulation, xeriscaping, and LEED rating system. The students will become aware of indoor and outdoor environmental issues and the life cycle costs of the existing systems. They will also learn the latest science and technology to reduce the negative effect of these subsystems on the environment. Laboratory: hands-on experience with the above subsystems, site visits, Computer simulations, research, projects, and presentations. There are no prerequisites for this course and it is open to all students. **Corequisite(s):** ENS 253L **CC:** SET, GDQR, GETS, SCLB **ISP:** ENS, STS

ENS 263 - U.S. Environmental Policy

Course Units: 1 This course examines the emergence, development, and future directions of environmental policy within the United States. It covers early environmental policy achievements such as the Clean Air Act, the reasons for federal inaction on environmental policy since the 1990s, and new directions for policy action in the 21st century as society understands how to mitigate and adapt to climate change. **CC:** LCC, SOCS **ISP:** AFR, AMS, ENS

ENS 264 - Climate Communication

Course Units: 1 **Cross-Listed:** PSC 264

ENS 291 - Construction for Humanity

Course Units: 1.0 An interdisciplinary introduction to the technology of construction and the social uses of building by humans. The course will consider types of building materials and their application to domestic housing, castles, cathedrals, palaces, monuments, dams, bridges, tunnels, factories, and office buildings. **Cross-Listed:** HST 291 **CC:** SET, GETS **ISP:** ENS, STS

ENS 299 - Environmental Forensics

Course Units: 1.0 An interdisciplinary course that will present topics detailing the intersection between the environment, ethics, law, society, litigation, policy, economics, pollution/contamination, cleanup, testing, standards, and sustainability. Sources of environmental problems are usually related to emissions, pollution, contamination, and/or waste disposal. Whether the cause is intentional or non-intentional, natural factors or a man-made disaster, or due to normal operation or accident, a crisis ensues and cleanup becomes necessary. This inevitably leads to legal actions and litigations that rely on experts in conducting scientific investigations to establish the facts surrounding potential controversies. Topics discussed in the course include liability, environmental site assessment, insurance litigation, toxic torts, science tools, sampling & measurements, statistical analysis, chemical fingerprinting, contaminant transport models, and environmental forensic microscopy. The course will illustrate the above points using case studies. **CC:** SET, GETS, WAC **ISP:** ENS, STS

ENS 302 - U.S. Energy Policy

Course Units: 1 Transitions to zero-carbon sources of energy are a critical part of addressing climate change globally. Within various parts of the United States, this transition has been slow and involved a number of political conflicts. Fossil fuel corporations, energy interest groups, and several other actors have fought over the direction of energy policy, with these battles largely occurring at the state and local levels. This class explores these relationships and conflicts to understand the battles over a clean energy transition in the United States and the implications for addressing climate change. **Cross-Listed:** PSC 302 **CC:** SOCS **ISP:** ENS, STS

GEO 109 - Global Climate Change

Course Units: 1.0

Global climate change is the defining environmental issue of our time. The impacts of climate change disproportionally affect populations who have contributed the least to atmospheric greenhouse gas loading. This course will review the basis for the overwhelming scientific consensus that ongoing warming is not natural; topics include: the radiation balance of Earth, the role of greenhouse gases on Earth's surface temperature, atmospheric and oceanic circulation, and natural oscillators in the climate system. A significant portion of the course is dedicated to understanding natural climatic variability. Students will prepare and submit policy briefs to policy makers at the federal, state, and/or local level that outline ways to mitigate and/or adapt to climate change. Preference given to first and second year students. **Corequisite(s):** GEO-109L
CC: SET, GNPS **ISP:** ENS, STS

GEO 209 - Paleoclimatology

Course Units: 1.0 Climate is fundamentally relevant to modern and ancient societies. Global warming is occurring today, and whether it is driven by human activities (e.g., CO2, CH4 emissions) or by natural climate cycles can only be determined by understanding natural climatic variability. Fortunately, there are many tools, and natural climatic records that can provide us with information on past climate (e.g. tree rings, ice cores from glaciers, and sediment cores from lakes and oceans). Obtaining, documenting and interpreting these records is the field of paleoclimatology, and it is the focus of this course. Past climate variability is used to highlight possible scenarios of future climate change. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 209L **CC:** SCLB **ISP:** ENS

GEO 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on Earth and serves as a vital resource that supports the economies and ecosystems of the world - including providing much of the irrigation water that grows our food, supplying drinking water to over 2 billion people, and sustaining surface water bodies and groundwater dependent ecosystems. With the world's groundwater resources threatened by intensive groundwater pumping, environmental and climate change, and the release of contaminants into the environment, there is a pressing need to better understand and manage this resource. Groundwater hydrology is a highly interdisciplinary field that brings together the geologic and environmental sciences with engineering. This course will begin by exploring the environmental and geologic factors that influence the occurrence and movement of groundwater. We will then delve into the physical laws the govern groundwater flow and learn how to model these flows. Later in the course we will cover the role of groundwater in a range of geologic and ecological processes. We will also cover engineering applications of groundwater such as the hydraulics of pumping wells, land subsidence, and the movement of contaminants within aquifers. Students will leave this course with the fundamental knowledge needed to begin answering the scientific and engineering challenges related to our groundwater resources. **Cross-Listed:** ENS 210 **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 210L **CC:** GDQR, GETS, GNPS **ISP:** ENS

GEO 355T - Living on the Edge

Course Units: 1.0 This course is a mini-term abroad. The field study of earthquakes, volcanoes, glaciers, and other hazards where tectonic plates collide and mountains form. Field studies focus on understanding the science behind geologic hazards that lead to catastrophic events and subsequent loss of life. Fieldwork is aimed at recognizing hazards, understanding the processes behind the hazards, and to see the role that society plays in mitigating these hazards. The study area alternates around the Pacific Rim between locations that include Peru (June), Alaska (June), and New Zealand (December). Fieldwork is preceded by organizational sessions on campus to prepare for field projects. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **ISP:** ENS

GSW 200 - Beyond Woman/Body/Nature: Ecofeminism, Systems Theories, and Social Activism

Course Units: 1 This course's exploration of ecofeminism, systemic theories, and social justice activism and practices analyzes how paradigms and historical inequalities have devalued both 'women' and 'nature,' leading to the oppression and denigration of both. As a movement that draws linkages between environmental issues and intersectional feminist concerns, ecofeminism asserts that solutions to environmental problems require a feminist perspective, and contemporary feminist theory and practice require an environmental perspective. **CC:** SOCS, GLIT **ISP:** ENS

HST 206 - Environmental Histories of Empire

Course Units: 1.0 This course will explore histories of empire in comparative perspective. It provides students with an introduction to global environmental history by focusing on the changing relationships between people and their natural environments. It takes a transnational approach, exploring various case studies drawn from different imperial settings and temporalities. We will look at the development of early states, the growth of the capitalist world economy in the Atlantic, successive periods of empire-building in Africa and Asia, new forms of resource extraction and changing commodity flows, and environmental politics, while placing the natural world at the center of our analysis. In this course, we will use a more expansive definition of imperialism to include not only formal territorial empires, but also informal economic ones and various post-colonial forms of domination. Other themes to be explored will be: changing perceptions of the natural world, industrialization, warfare, urbanization, technological transformations, and changes in production and consumption. The goal is that students will develop of better understanding of the modern world and the ways in which humans have radically changed their natural environments. **CC:** LCC **ISP:** AFR, ENS

HST 225 - American Environmental History

Course Units: 1.0 This course aims to give students the knowledge and the tools to think critically about how history has shaped the present state of the earth and human relationships with it. It focuses on the history of man's interaction with nature on the North American continent, with a particular focus on the area that would become the United States, from precolonial times until the present. **CC:** SOCS **ISP:** AMS, ENS

HST 291 - Construction for Humanity

Course Units: 1.0 An interdisciplinary introduction to the technology of construction and the social uses of building by humans. The course considers types of building materials and their application to domestic housing, castles, cathedrals, palaces, monuments, dams, bridges, tunnels, and skyscrapers. **Cross-Listed:** ENS 291 **CC:** SET, SOCS, GETS **ISP:** ENS, STS

HST 299 - The Nuclear Age

Course Units: 1.0 The nuclear age began with the discovery of radioactivity on the eve of the twentieth century and continues on to the present. The technology people have created to study and exploit the energy and particles released by nuclei, including nuclear weapons and nuclear power, but also many other applications in industry and medicine, have defined this age. This course will survey these economic, political, social, and cultural problems facing mankind:

the proliferation of nuclear weapons, and human-induced climate change. **CC:** SOCS, GCHF, GETS, WAC **ISP:** ENS, STS

MLT 209 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** ENS 222 **CC:** LCC, SET, HUL, HUM, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

MLT 271 - Sustainability, Tourism and Travel in the Hispanic World

Course Units: 1 This course explores the impact of tourism and how once can become a more mindful and sustainable traveler--what does that even mean? Students will engage with terms like ecotourism, voluntourism, community tourism, agrotourism, and indigenous tourism through concrete case studies from Spanish-speaking countries, such as Spain, Costa Rica, Bolivia, Mexico, Ecuador and the Galapagos Islands. They will learn about each country's geography and critically reflect on their role as travelers. This course is highly collaborative, student-centered, participatory, and project-based. Students will read newspapers articles, scholarly articles, watch documentaries, videos, and produce weekly written reactions and design a three-week sustainable trip. **CC:** HUM, LCCS, GCHF, GWOL, WAC **ISP:** ENS, LAS

PHL 273 - Environmental Ethics

Course Units: 1.0 An exploration of the ethical and philosophical ideas that have shaped attitudes toward the environment and toward non-human species. **CC:** HUM **ISP:** ENS, STS

PSC 242 - Comparative Climate Change Politics

Course Units: 1 This year we have seen historic temperature records and heatwaves across the globe, the impacts of wildfires around the country and locally, and periods of drought and extreme storms in different areas. These have been attributed to or amplified by anthropogenic climate change, which is one of the biggest challenges facing society in the 21st century. This course examines why climate change is such a "wicked problem," and why it is so difficult to address effectively. The barriers to addressing climate change are not just technical and scientific, but also political and social. Thinking about a future where we as a society mitigate the worst impacts of climate change this century, and adapt to other impacts entails navigating different political systems around the world and balancing various geopolitical and economic interests. Through this course, we will examine how these factors shape or constrain efforts to address climate change in Western Europe, the United States, China, India, and other parts of the world. We will also examine how climate change is impacting human life and security in these countries and other parts of the world, and how it may amplify existing inequalities and other crises. **ISP:** ENS, STS

PSC 263 - US Environmental Policy

Course Units: 1 This course examines the emergence, development, and future directions of environmental policy within the United States. It covers early environmental policy achievements such as the Clean Air Act, the reasons for federal inaction on environmental policy since the 1990s, and new directions for policy action in the 21st century as society understands. **ISP:** ENS, STS

PSC 302 - U.S. Energy Policy

Course Units: 1

Considers the protections afforded to individual rights and liberties by the U.S. Constitution and the Bill of Rights. Topics include freedom of speech and assembly, the right to privacy, religious freedom, equal protection and discrimination, and the due process rights of those accused of crimes. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **Cross-Listed:** ENS 302 **Prerequisite(s):** PSC 111 or PSC 112
CC: SOCS, JCHF, JSPE **ISP:** AMS, ENS, STS

- REE 300T - History and Environment of Siberia

SOC 202 - Social Problems, Policy and Pop Culture

Course Units: 1.0 Identification of social forces and cultural images of major social problems (i.e. substance abuse, violence, crime, pollution) and relevant social policies. **Prerequisite(s):** SOC 100 **CC:** SOCS, JCHF, JSPE **ISP:** ENS

SOC 260 - Population and Society: Demographic Trends

Course Units: 1.0 An introduction to the study of human populations and the dynamics of birth, death and migration. Focus on how populations grow and decline and the implications for social policy in areas such as health, aging, social inequality, the environment, immigration and urban life. **Prerequisite(s):** SOC 100 **ISP:** ENS

SOC 270 - Social Movements, the Environment, and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** PSC 283 **Prerequisite(s):** SOC 100 **ISP:** AMS, ENS, STS

SOC 271 - Sociology of Disaster

Course Units: 1.0 This course is an introduction to the sociological analysis of disasters. We will consider how sociologists conceptualize and theorize about disasters and the social and physical damage, death and injury, and economics loss they involve. Variations in the vulnerability of communities and particular social groups to such events will also be examined. **Prerequisite(s):** SOC 100 **ISP:** ENS

SOC 370 - Public Health

Course Units: 1.0 An overview of public health with emphasis on the impact of large-scale social and cultural forces on the health of the public. The epidemiology of selected diseases, injuries, and the addictive disorders; the health effects of exposure to environmental and work place toxins; the role of nutrition in health. **ISP:** ENS, STS

SPN 334 - Cartographies of Disasters

Course Units: 1.0 The association between Latin America and catastrophe paints a unidimensional picture that does not correlate with the region's political, social, and geographical reality. With its history of colonialism, natural disasters, civil wars, dictatorships, and economic and political crises, Latin America is repeatedly constructed on the myth of disaster--whether natural or man-made. Disaster, by definition, is a serious disruption that causes great damage and involves human, material, economic and/or environmental loss. As such, it oftentimes leaves no room for discussion even if what constitutes a disaster can be subjective. In this class, we will tease out the problematic association between disaster and Latin America by exploring the effects of a disaster beyond the physical. Through concrete examples and its cultural representations, we will study the ways in which disaster is defined and experienced while analyzing its implications, political and otherwise. By drawing connections between disasters, their representations, and their

relationship to politics and history, we will discuss issues including identity, class, power, extraction, and accessibility. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUM, WAC **ISP:** ENS, GSWS, LAS

Energy and Sustainability

BIO 322 - Conservation Biology w/lab

Course Units: 1.0 Natural ecosystems have suffered from declining biodiversity and encroaching human development. In this course, you will examine how these alterations impact populations and ecosystems and will evaluate management strategies designed to facilitate long-term sustainability. Topics include genetics and population biology of rare species, threats to biodiversity and adaptive ecosystems management. **Prerequisite(s):** BIO 103 and BIO 104 or permission of instructor. **Corequisite(s):** BIO 322L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **ISP:** ENS

ENS 200 - Energy

Course Units: 1.0 Designed to acquaint the student with the many societal and technological problems facing the United States and the world due to the ever increasing demand for energy. **Corequisite(s):** ENS 200L **Lecture/Lab Hours** One lab per week. **ISP:** ENS

ENS 208 - Waste Management and Recycling

Course Units: 1.0 This course will introduce students to various sources of solid waste materials including hazardous and nonhazardous waste, and biodegradable and non-biodegradable waste. Focus areas are overview of landfill systems, geosynthetics, geotextiles, geomembranes, geonets, single clay liner, single geomembrane liner, composite liner systems, leak detection and leachate collection, removal and treatment of leachate, and capping and closure systems. The recycling segment will explore natural resources of raw materials including origin and use. It will also investigate the potential and limitation for recycling of materials. The focus area will be various applications of recycling recyclable and nonrecyclable materials especially non-biodegradable waste. Discussion of methods of manufacture and compositions of such materials will concentrate on advanced industrial applications for the reuse of non-recyclable waste materials. Application areas include production of new materials, materials with superior qualities for special purposes, and materials with high level of resistance against certain environmental conditions. The course will also touch on the political aspect of recycling including consumer attitude and government incentives to encourage recycling. **Prerequisite(s):** ENS 100 or GEO 110 **CC:** SET, GETS **ISP:** ENS, STS

ENS 209 - Renewable Energy Systems

Course Units: 1.0 The study of renewable energy resources and the conversion technologies available to utilize them to meet society's energy needs. Topics include forms of energy; First and Second Laws of Thermodynamics; energy conversion and efficiency; sustainability; energy storage. Historical perspective on world and U.S. energy usage, conversion technologies, and energy resources. Fundamentals of the conversion processes and systems involved in the use of solar thermal and photovoltaic, wind, bioenergy, geothermal, thermoelectric, hydro and ocean technologies. The use of hydrogen as a fuel and technologies to produce and use it. Economic and environmental issues relevant to renewable energy resources. Class will be supplemented with laboratory demonstrations and field trips to visit existing renewable energy systems. **Prerequisite(s):** MER 231 or PHY 122 **Corequisite(s):** ENS 209L **CC:** SET **ISP:** ENS, STS

ENS 222 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been

dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** MLT 209 **CC:** LCC, SET, HUM, HUL, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

ENS 242 - Comparative Climate Change Politics

Course Units: 1 This past year we have seen historic temperature records and heatwaves across the globe, the impacts of wildfires around the country and locally, and periods of drought and
extreme storms in different areas. These have been attributed to or amplified by anthropogenic climate change, which is one of the biggest challenges facing society in
the 21 st century. This course examines why climate change is such a "wicked problem", and why it is so difficult to address effectively. The barriers to addressing climate change are not just technical and scientific, but also political and social. Thinking about a future where we as a society mitigate the worst impacts of climate change this century, and adapt to other impacts entails navigating different political systems around the world and balancing various geopolitical and economic interests. Through this course, we will examine how these factors shape or constrain efforts to address climate change in Western Europe, the United States, China, India, and other parts of the world. We will also examine how climate change is impacting human life and security in these countries and other parts of the world, and how it may amplify existing inequalities and other crises. **ISP:** ENS

ENS 247 - Sustainable Infrastructure

Course Units: 1.0 Infrastructure is the backbone of nations. It is a society's inventory of systems and facilities that allow it to function properly and smoothly. This includes, but is not limited to, roads, bridges, tunnels, dams, transit, waterways, ports, aviation, pipelines, transmission lines, rail, parks, and public buildings such as schools, courts, hospitals, and recreational and sport facilities. Infrastructure involves services such as energy, water supply, wastewater treatment, power and gas distribution grids, waste collection, and sewer disposal. Major advances in technology resulted in digital infrastructure that includes communication networks, signal transmission towers, data centers, information repositories, servers/computers, and the Internet. This course explores the progress humanity achieved in developing infrastructure facilities and the present move towards sustainability. Methods, materials, processes, technologies, practices, and operations required to maintain a healthy environment and efficient infrastructure will be examined. The intersection between policies necessary for sustainable infrastructure and political, economic, social, societal, and cultural factors will be emphasized. **CC:** SET, GETS **Lecture/Lab Hours** Four class hours weekly. **ISP:** ENS, STS

ENS 253 - Environmentally Friendly Buildings

Course Units: 1.0 Many energy consumption and adverse environmental effects are attributable to buildings and their use. In this course, through instructions, hands-on experience, computer simulation, and research, the students will become acquainted with the inner workings of the subsystems in buildings: foundations, framings, walls, sidings, roof, electrical systems, lighting, appliances, heating, air-conditioning, ventilation, indoor air quality, basement, crawl space, attic, water and moisture management; plumbing, flooring, finishes, furniture, insulation, xeriscaping, and LEED rating system. The students will become aware of indoor and outdoor environmental issues and the life cycle costs of the existing systems. They will also learn the latest science and technology to reduce the negative effect of these subsystems on the environment. Laboratory: hands-on experience with the above subsystems, site visits, Computer simulations, research, projects, and presentations. There are no prerequisites for this course and it is open to all students. **Corequisite(s):** ENS 253L **CC:** SET, GDQR, GETS, SCLB **ISP:** ENS, STS

ENS 263 - U.S. Environmental Policy

Course Units: 1 This course examines the emergence, development, and future directions of environmental policy within the United States. It covers early environmental policy achievements such as the Clean Air Act, the reasons for

federal inaction on environmental policy since the 1990s, and new directions for policy action in the 21st century as society understands how to mitigate and adapt to climate change. **CC:** LCC, SOCS **ISP:** AFR, AMS, ENS

ENS 277 - The Water Paradox

Course Units: 1.0 Fresh water is tasteless, odorless, and colorless. These characteristics make water one of the most intriguing materials. It is a necessity for life. A paradox involves features or qualities of contradictory nature. Water is notorious with such qualities. Water is one of the cheapest materials yet it is the most precious commodity known to humanity. Water could be the source of peace and development yet it could be a reason for war and conflict. Water could be a force for good to generate hydropower yet unchecked or unregulated this force could be in the form of destructive floods. Water could be a weapon to combat desertification yet too much thereof could cause erosion and failures. Floods come with loads of mud and silt that charge river deltas and keep them fertile yet weaker floods result in lesser deposits that could threaten river deltas with sea attacks. Water has always been a main reason for people to settle the land yet a shortage thereof could force people to migrate and leave their homeland. This course shows the role water played in the past, is presently playing, and will play in the future in defining communities and societies. **CC:** SET, GETS **ISP:** ENS, STS

ENS 291 - Construction for Humanity

Course Units: 1.0 An interdisciplinary introduction to the technology of construction and the social uses of building by humans. The course will consider types of building materials and their application to domestic housing, castles, cathedrals, palaces, monuments, dams, bridges, tunnels, factories, and office buildings. **Cross-Listed:** HST 291 **CC:** SET, GETS **ISP:** ENS, STS

ENS 299 - Environmental Forensics

Course Units: 1.0 An interdisciplinary course that will present topics detailing the intersection between the environment, ethics, law, society, litigation, policy, economics, pollution/contamination, cleanup, testing, standards, and sustainability. Sources of environmental problems are usually related to emissions, pollution, contamination, and/or waste disposal. Whether the cause is intentional or non-intentional, natural factors or a man-made disaster, or due to normal operation or accident, a crisis ensues and cleanup becomes necessary. This inevitably leads to legal actions and litigations that rely on experts in conducting scientific investigations to establish the facts surrounding potential controversies. Topics discussed in the course include liability, environmental site assessment, insurance litigation, toxic torts, science tools, sampling & measurements, statistical analysis, chemical fingerprinting, contaminant transport models, and environmental forensic microscopy. The course will illustrate the above points using case studies. **CC:** SET, GETS, WAC **ISP:** ENS, STS

ENS 302 - U.S. Energy Policy

Course Units: 1 Transitions to zero-carbon sources of energy are a critical part of addressing climate change globally. Within various parts of the United States, this transition has been slow and involved a number of political conflicts. Fossil fuel corporations, energy interest groups, and several other actors have fought over the direction of energy policy, with these battles largely occurring at the state and local levels. This class explores these relationships and conflicts to understand the battles over a clean energy transition in the United States and the implications for addressing climate change. **Cross-Listed:** PSC 302 **CC:** SOCS **ISP:** ENS, STS

GEO 109 - Global Climate Change

Course Units: 1.0

Global climate change is the defining environmental issue of our time. The impacts of climate change disproportionally affect populations who have contributed the least to atmospheric greenhouse gas loading. This course will review the basis for the overwhelming scientific consensus that ongoing warming is not natural; topics include: the radiation balance of Earth, the role of greenhouse gases on Earth's surface temperature, atmospheric and oceanic circulation, and natural oscillators in the climate system. A significant portion of the course is dedicated to understanding natural climatic variability. Students will prepare and submit policy briefs to policy makers at the federal, state, and/or local level that outline ways to mitigate and/or adapt to climate change. Preference given to first and second year students. **Corequisite(s):** GEO-109L
CC: SET, GNPS **ISP:** ENS, STS

HST 109 - History of Sustainability

Course Units: 1.0 Sustainability. You now find the word just about everywhere. For more than a few people it has become the defining mission of their generation, an existential challenge that must be met for the survival of humanity. This is a course in thematic global history that explores the concept of sustainability from an historical perspective. Sustainability is not a new thing in human history or just a consequence of our environmentally-challenged present. Sustainability is part of our cultural inheritance with deep roots in the histories of Asia, the Americas, Europe, and Africa. Also, sustainability is not simply synonymous with environmentalism or climate change. It has always encompassed social realities like power, trade and commerce, cultural identities, human relationships to science and technology, and much more. Sustainability is a history of the societies we create and the values that define them, for good or ill. Ultimately, the history of sustainability is an opportunity to reflect on the nature of our humanity and the ideals that empower a just future. We will explore sustainability's history through primary texts, analyses of the concept across time and space, the study of sustainability challenges - successes and failures - in past societies, and contemporary realties faced by peoples across the globe, whether in the megacities of China and Latin America or the urban gardens of Detroit and the green housing cooperatives of Berlin. **CC:** LCC, SOCS, GCHF **ISP:** ENS

HST 206 - Environmental Histories of Empire

Course Units: 1.0 This course will explore histories of empire in comparative perspective. It provides students with an introduction to global environmental history by focusing on the changing relationships between people and their natural environments. It takes a transnational approach, exploring various case studies drawn from different imperial settings and temporalities. We will look at the development of early states, the growth of the capitalist world economy in the Atlantic, successive periods of empire-building in Africa and Asia, new forms of resource extraction and changing commodity flows, and environmental politics, while placing the natural world at the center of our analysis. In this course, we will use a more expansive definition of imperialism to include not only formal territorial empires, but also informal economic ones and various post-colonial forms of domination. Other themes to be explored will be: changing perceptions of the natural world, industrialization, warfare, urbanization, technological transformations, and changes in production and consumption. The goal is that students will develop of better understanding of the modern world and the ways in which humans have radically changed their natural environments. **CC:** LCC **ISP:** AFR, ENS

HST 291 - Construction for Humanity

Course Units: 1.0 An interdisciplinary introduction to the technology of construction and the social uses of building by humans. The course considers types of building materials and their application to domestic housing, castles, cathedrals, palaces, monuments, dams, bridges, tunnels, and skyscrapers. **Cross-Listed:** ENS 291 **CC:** SET, SOCS, GETS **ISP:** ENS, STS

HST 299 - The Nuclear Age

Course Units: 1.0 The nuclear age began with the discovery of radioactivity on the eve of the twentieth century and continues on to the present. The technology people have created to study and exploit the energy and particles released by nuclei, including nuclear weapons and nuclear power, but also many other applications in industry and medicine,

have defined this age. This course will survey these economic, political, social, and cultural problems facing mankind: the proliferation of nuclear weapons, and human-induced climate change. **CC:** SOCS, GCHF, GETS, WAC **ISP:** ENS, STS

MLT 209 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** ENS 222 **CC:** LCC, SET, HUL, HUM, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

MLT 271 - Sustainability, Tourism and Travel in the Hispanic World

Course Units: 1 This course explores the impact of tourism and how once can become a more mindful and sustainable traveler--what does that even mean? Students will engage with terms like ecotourism, voluntourism, community tourism, agrotourism, and indigenous tourism through concrete case studies from Spanish-speaking countries, such as Spain, Costa Rica, Bolivia, Mexico, Ecuador and the Galapagos Islands. They will learn about each country's geography and critically reflect on their role as travelers. This course is highly collaborative, student-centered, participatory, and project-based. Students will read newspapers articles, scholarly articles, watch documentaries, videos, and produce weekly written reactions and design a three-week sustainable trip. **CC:** HUM, LCCS, GCHF, GWOL, WAC **ISP:** ENS, LAS

- MLT 300 - Environmental History: Siberia

PSC 242 - Comparative Climate Change Politics

Course Units: 1 This year we have seen historic temperature records and heatwaves across the globe, the impacts of wildfires around the country and locally, and periods of drought and extreme storms in different areas. These have been attributed to or amplified by anthropogenic climate change, which is one of the biggest challenges facing society in the 21st century. This course examines why climate change is such a "wicked problem," and why it is so difficult to address effectively. The barriers to addressing climate change are not just technical and scientific, but also political and social. Thinking about a future where we as a society mitigate the worst impacts of climate change this century, and adapt to other impacts entails navigating different political systems around the world and balancing various geopolitical and economic interests. Through this course, we will examine how these factors shape or constrain efforts to address climate change in Western Europe, the United States, China, India, and other parts of the world. We will also examine how climate change is impacting human life and security in these countries and other parts of the world, and how it may amplify existing inequalities and other crises. **ISP:** ENS, STS

PSC 263 - US Environmental Policy

Course Units: 1 This course examines the emergence, development, and future directions of environmental policy within the United States. It covers early environmental policy achievements such as the Clean Air Act, the reasons for federal inaction on environmental policy since the 1990s, and new directions for policy action in the 21st century as society understands. **ISP:** ENS, STS

PSC 272 - The Environment, Energy, and US Politics

Course Units: 1.0 Examination of how politics and policymaking affect the air we breathe, the water we drink, and the land we live on. This course will explore key U.S. environmental issues and their scientific underpinnings as well as the connections between these issues and our collective use of natural resources. The course will review major pieces of federal environmental law in the United States and address the policy considerations, justifications, and regulatory

frameworks underlying them, as well as the effectiveness of these laws in achieving a healthier environment. The course will also examine the respective roles of Congress, the executive agencies, and the courts in determining environmental policy. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, STS

PSC 302 - U.S. Energy Policy

Course Units: 1

Considers the protections afforded to individual rights and liberties by the U.S. Constitution and the Bill of Rights. Topics include freedom of speech and assembly, the right to privacy, religious freedom, equal protection and discrimination, and the due process rights of those accused of crimes. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **Cross-Listed:** ENS 302 **Prerequisite(s):** PSC 111 or PSC 112
CC: SOCS, JCHF, JSPE **ISP:** AMS, ENS, STS

TAB 333T - New Zealand Mini-Term Abroad

Course Units: 1 **CC:** LCC **ISP:** ENS
*Provided term paper is written on an environmental topic.

F. Environmental Services and Policy

(Junior seminar for Environmental Policy majors)

SOC 450 - Environmental Services and Policy

Course Units: 1.0 The focus of this seminar is on the implementation of different environmental policies. Internships or case studies of environmental organizations, including NYS Department of Environmental Conservation, are part of the course. **Prerequisite(s):** SOC 100 **CC:** SOCS, WAC, WAC-R, WS **ISP:** ENS

G. ESPE Senior Seminar

ENS 460 - Environmental Science & Policy Senior Seminar

Course Units: 1.0 This capstone course for the environmental science and policy program brings together the expertise and experience of all environmental science and policy seniors to study contemporary environmental issues, usually related to a single topic or small number of topics. Issues may include legal cases, legislation and regulation, application of technology to social problems, and national and global environmental policy. Class time may include discussion, debate, field trips, class presentations, and outside speakers. Research and presentation of findings will be stressed. **Prerequisite(s):** Senior standing; Environmental Policy or Environmental Science Major **ISP:** ENS

H. Two terms of thesis research

ENS 498 - Environmental Policy Research 1

Course Units: 0.0 Senior-level research on an environmentally-related topic. Work may take the form of two independent study term projects, or as a two-term senior thesis. Topics are chosen in consultation with and conducted under the direction of the student's advisor. Thesis research must follow the guidelines of the host department. The

results of senior research are presented in the senior seminar. **Prerequisite(s):** Senior standing in the environmental studies program and permission of the instructor.

ENS 499 - Environmental Policy Research 2

Course Units: 2.0 Senior-level research on an environmentally-related topic. Work may take the form of two independent study term projects, or as a two-term senior thesis. Topics are chosen in consultation with and conducted under the direction of the student's advisor. Thesis research must follow the guidelines of the host department. The results of senior research are presented in the senior seminar. **Prerequisite(s):** Senior standing in the environmental studies program and permission of the instructor. **CC:** WS **Note:** Substantial writing is required (must satisfy WAC-WS requirements, for which WS credit is awarded).

Requirements for Honors in Environmental Science, Policy, and Engineering:

The major requirements as specified above are required, as are the GPA requirements of Union College described elsewhere in this catalog. A senior research thesis is required, consisting of at least two terms of ENS 497 and ENS 498 (independent research with a faculty member) and presentation at Steinmetz Symposium or other conference as approved by the advisor.

Environmental Science and Policy Minor

Requirements for the Minor in Environmental Science and Policy:

1. Required course:

ENS 100 - Introduction to Environmental Studies

Course Units: 1.0 An introduction to environmental studies from a scientific, policy, and engineering perspective. This course covers human-environment interactions, with a focus on the impacts of human activities on natural systems such as climate, air, water, and species diversity and the ensuing environmental injustice. The course discusses sustainable solutions for how we can build systems that will support billions of humans and the natural world. Fieldwork during lab periods involves the investigation of local environmental problems and solutions. This course is intended for first- and second-year Environmental Science and Environmental Policy majors, but it is open to all students. **Corequisite(s):** ENS 100L **CC:** SCLB, GNPS **ISP:** ENS, STS

2. Elective courses:

Two science courses, two policy/humanities courses, and a fifth course in either science or policy/humanities. Courses must be selected from the following lists. No more than two courses may be taken from any one department, and no more than one course may be taken at the 100 level (not including ENS 100).

Please Note: Environmental Science and Environmental Policy majors are not allowed to minor in Environmental Science and Policy.

Science Courses

Biology:

BIO 103 - Diversity of Life: Heredity, Evolution, and Ecology

Course Units: 1.0 More than 3.5 billion years of evolution have resulted in the astonishing diversity of life on earth. This course will explore biodiversity through the lens of ecology, evolution, and heredity, and will investigate various topics, including: the history of life on Earth, evolutionary change, Mendelian & non-Mendelian inheritance, as well as human impacts on biodiversity and ecological functioning. These processes will be studied in the lab using animal model systems, computer simulations, observations of diversity, and molecular techniques. Students will learn experimental design, data analysis, scientific writing, and various laboratory skills during weekly lab sessions. **Corequisite(s):** BIO 103L **CC:** SCLB, GNPS **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 104. **ISP:** ENS

BIO 235 - Global Biogeochemical Cycles

Course Units: 1.0 Biology, geology and chemistry are intricately linked to form the world around us. Biogeochemical cycles set the stage for life on Earth. This course explores the carbon, nitrogen, water, phosphorus, and sulfur cycles at the surface of the Earth. We investigate how biological (e.g., primary production, respiration), anthropogenic (e.g., urbanization, pollution) and geological processes (e.g., tectonics, rock weathering) influence these chemical cycles and in turn how these cycles influence the climate and the oceans. Field studies focus on tropical marine biogeochemistry of coral reefs, mangrove forests, seagrass meadows, lagoons and estuaries. Course includes a required week-long field trip to a remote field station in Panama. There are additional costs associated with field trip expenses. All students must meet basic term abroad requirements and submit an application. This course is open to all students, but preference will be given to those with a declared major in geosciences, environmental science, chemistry or biology. **Cross-Listed:** GEO 305 **Corequisite(s):** BIO 305L **CC:** SCLB, WAC, WAC-R **ISP:** ENS

BIO 319 - Vertebrate Natural History w/lab

Course Units: 1.0 This course explores the biology of vertebrate animals with emphasis on understanding the diversity, life history, taxonomy, and unique adaptations of local vertebrate species (exclusive of fish). The laboratory focuses on developing scientifically sound skills in observation and identification of amphibians, reptiles, mammals, and birds. There will be frequent field trips to observe vertebrates in their natural habitats. Additional meetings will be required for regional field excursions, and for morning bird watching. Students must be available for one evening and one morning field trip. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 319L **CC:** SCLB **ISP:** ENS

BIO 320 - Ecology w/lab

Course Units: 1.0 Organisms and their environment, population and community ecology, and the structure and integration of ecosystems will be discussed along with a focus on animal community ecology. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 320L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS **Note:** There may be field trips requiring scheduling outside of normal class time.

BIO 322 - Conservation Biology w/lab

Course Units: 1.0 Natural ecosystems have suffered from declining biodiversity and encroaching human development. In this course, you will examine how these alterations impact populations and ecosystems and will evaluate management strategies designed to facilitate long-term sustainability. Topics include genetics and population biology of rare species, threats to biodiversity and adaptive ecosystems management. **Prerequisite(s):** BIO 103 and BIO 104 or permission of instructor. **Corequisite(s):** BIO 322L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 324 - Plant Ecology w/lab

Course Units: 1.0 Examines the factors that affect the distribution and abundance of plants including the availability of water or nutrients, interactions with neighboring plants or animals, and the frequency of disturbances such as fires. Topics also include such environmental issues as climate change, exotic species invasions, the conservation of rare species, and the benefits of urban nature for human health. The weekly lab includes field excursions and quantitative data analysis. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 324L **CC:** SCLB, WAC-R, GDQR, GNPS **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 350 - Evolutionary Biology w/lab

Course Units: 1.0 Major concepts and mechanisms of biological evolution, including history of life, population genetics, molecular evolution, Darwinian medicine, and an emphasis on the processes of speciation. **Prerequisite(s):** BIO 103 and BIO 104 or permission of the instructor. **Corequisite(s):** BIO-350L **CC:** SET **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 350T - Terrestrial Ecology of Australia

Course Units: **CC:** SET **ISP:** ENS

BIO 352T - Marine Ecology of Australia

Course Units: 1 **CC:** SET **ISP:** ENS

Chemistry:

CHM 101 - Introductory Chemistry 1

Course Units: 1.0 This is an introductory course that focuses on atomic and molecular structure, chemical bonding, stoichiometry, aqueous chemical reactions, and the properties of gases, liquids, solids and solutions. **Prerequisite(s):** Not open to students who have scored 4 or 5 on the AP Chemistry Exam or who have completed CHM 110H . All students who wish to enroll in an introductory chemistry course must take a placement examination to determine the appropriate course. See Course Selection Guidelines for more information on placement. **Corequisite(s):** CHM 101L **CC:** SCLB **Lecture/Lab Hours** Three lab hours/week,6/10 weeks. **ISP:** ENS

CHM 245 - Environmental Chemistry

Course Units: 1.0 A course focused on the role of chemical principles such as chemical equilibrium, kinetics and chemical structure in understanding natural environmental cycles and the impacts of human activity on those cycles. Topics covered include: aquatic chemistry and water pollution, atmospheric chemistry and air pollution, energy and climate change, and toxic organic chemicals in the environment. **Prerequisite(s):** CHM 231 **CC:** SET **ISP:** ENS

Environmental Science, Policy, and Engineering:

CEE 208 - Water, Sanitation, Health

Course Units: 1 This course will examine the connections between water, sanitation, and public health. Students will learn about water sources and potential sources of contamination; the role of drinking water and wastewater treatment in reducing outbreaks of disease; and explore real world examples of water and sanitation concerns. Students will work

in small teams to critically explore a global water, sanitation and health issue of interest to them with the goal of understanding the physical and societal drivers of the issue, key constraints, and potential solutions. **CC:** GETS **ISP:** ENS

ENS 200 - Energy

Course Units: 1.0 Designed to acquaint the student with the many societal and technological problems facing the United States and the world due to the ever increasing demand for energy. **Corequisite(s):** ENS 200L **Lecture/Lab Hours** One lab per week. **ISP:** ENS

ENS 204 - Geographic Information Systems

Course Units: 1.0 An introduction to Geographic Information Systems (GIS) technology and its practical uses. Topics include history of GIS, geographic data types, primary data structures, system design, map coordinate systems, data sources, metadata, census data, geographic coding and address matching, digitizing, remote sensing imagery, measures of data quality, and needs assessment. An emphasis will be on hands-on instruction using GIS software (ArcView). Students will work with ArcView throughout the term to complete assignments and a class project. Focus areas include archeology, electric and gas utilities, surveying, health and human services, insurance, law enforcement and criminal justice, media and telecommunications, transportation, water and wastewater, and natural resources. The ultimate goal is to use the spatial component of data in conducting analysis and making decisions. **Prerequisite(s):** A good background in the use of modern computer software. **Corequisite(s):** ENS 204L **CC:** SET, GETS **Lecture/Lab Hours** Two class hours and two lab hours weekly. **ISP:** ENS, STS

ENS 208 - Waste Management and Recycling

Course Units: 1.0 This course will introduce students to various sources of solid waste materials including hazardous and nonhazardous waste, and biodegradable and non-biodegradable waste. Focus areas are overview of landfill systems, geosynthetics, geotextiles, geomembranes, geonets, single clay liner, single geomembrane liner, composite liner systems, leak detection and leachate collection, removal and treatment of leachate, and capping and closure systems. The recycling segment will explore natural resources of raw materials including origin and use. It will also investigate the potential and limitation for recycling of materials. The focus area will be various applications of recycling recyclable and nonrecyclable materials especially non-biodegradable waste. Discussion of methods of manufacture and compositions of such materials will concentrate on advanced industrial applications for the reuse of non-recyclable waste materials. Application areas include production of new materials, materials with superior qualities for special purposes, and materials with high level of resistance against certain environmental conditions. The course will also touch on the political aspect of recycling including consumer attitude and government incentives to encourage recycling. **Prerequisite(s):** ENS 100 or GEO 110 **CC:** SET, GETS **ISP:** ENS, STS

ENS 209 - Renewable Energy Systems

Course Units: 1.0 The study of renewable energy resources and the conversion technologies available to utilize them to meet society's energy needs. Topics include forms of energy; First and Second Laws of Thermodynamics; energy conversion and efficiency; sustainability; energy storage. Historical perspective on world and U.S. energy usage, conversion technologies, and energy resources. Fundamentals of the conversion processes and systems involved in the use of solar thermal and photovoltaic, wind, bioenergy, geothermal, thermoelectric, hydro and ocean technologies. The use of hydrogen as a fuel and technologies to produce and use it. Economic and environmental issues relevant to renewable energy resources. Class will be supplemented with laboratory demonstrations and field trips to visit existing renewable energy systems. **Prerequisite(s):** MER 231 or PHY 122 **Corequisite(s):** ENS 209L **CC:** SET **ISP:** ENS, STS

ENS 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on earth and is a vital source of water for household, industrial, and agricultural uses worldwide. The well-being and prosperity of human civilization requires the sound stewardship and sustainable use of our groundwater supplies. In addition to serving as an essential resource for humanity, groundwater plays a central role in many environmental and geologic processes, including the maintenance of river flows between rainfall events, the occurrence of earthquakes, and the genesis of certain types of ore deposits and landforms. Groundwater is also a key consideration in many engineering operations such as the construction of dams and tunnels and the assessment of landslide and land subsidence risk. Groundwater hydrology is a highly interdisciplinary field that brings together the geologic and environmental sciences with engineering. This course will begin by exploring the physical properties of groundwater and the geologic media through which it flows, the physical laws that govern groundwater flow and transport, and techniques for modeling groundwater flow patterns. The mid-part of the course will focus on the engineering aspects of groundwater, covering topics such as the hydraulics of pumping wells, the transport of contaminants within aquifers, the remediation of contaminated aquifers, and well-drilling technology. Later we will cover the role groundwater plays in geologic processes and the role of geology in determining groundwater chemistry and quality. We will also discuss the connections between groundwater and human health and the importance of groundwater in the global food supply. Students will leave this course with the fundamental knowledge needed to begin answering scientific and engineering questions in the fascinating world of groundwater hydrology. **Cross-Listed:** GEO 210 **Prerequisite(s):** ENS 100 or any GEO course numbered 110 or higher. **CC:** GDQR, GETS, GNPS **Lecture/Lab Hours** One lab per week. **ISP:** ENS

ENS 215 - Exploring Environmental Data

Course Units: 1.0 Understanding how the Earth and environment works requires the careful analysis and interpretation of scientific data. Increasingly, the limitations to our understanding lie not in the availability of data, but rather in our ability to analyze and find meaning in it. Deriving insight from environmental data, in particular large and complex datasets, requires new tools, methods, and ways of thinking. In this class we are going to learn how to code in the programming language R and use it to analyze environmental data in order to better understand the Earth's systems. This course will feature a hands-on classroom with programming and data analysis occurring interactively during the class. Students will learn how to analyze and visualize large datasets and how to write code, while also covering interesting components of environmental and Earth sciences. **Prerequisite(s):** Any SET or SCLB. **CC:** SCLB, QMR, GDQR **Lecture/Lab Hours** Weekly lab required. **ISP:** ENS

ENS 222 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** MLT 209 **CC:** LCC, SET, HUM, HUL, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

ENS 234 - No Nonsense Sensors

Course Units: 1 Humans sense. They use their senses to monitor their surroundings. The basic five human senses are sight, hearing, smell, taste, and touch, and the sensory organs humans use to do these functions are the eyes, ear, nose tongue, and skin. Humans have had a long history of fascination with building devices that do sensory tasks. These are sensors, and unlike human sense, they are sleepless by design. The use of sensors has recently exploded. Sensor applications have penetrated many fields such as consumer products, healthcare, communication, transportation, industrial processes, sports, security, space, military, and the environment, to name a few. The presence of sensors is all around us in almost everything we use and come across in our daily life. Starting with smartphones, passing through sensor-activated lights in hallways, and ending with remotely sensed images that we receive from satellites orbiting Planet Earth from outer space. Sensors have invaded every aspect of human life and are predicted to be so pervasive in many extraordinary applications that will significantly enhance humans" quality of life. This course is designed for

students interested in learning more about sensors and their human applications i adding a level of convenience never thought possible before. **CC:** SET, GETS **ISP:** ENS, STS

ENS 247 - Sustainable Infrastructure

Course Units: 1.0 Infrastructure is the backbone of nations. It is a society's inventory of systems and facilities that allow it to function properly and smoothly. This includes, but is not limited to, roads, bridges, tunnels, dams, transit, waterways, ports, aviation, pipelines, transmission lines, rail, parks, and public buildings such as schools, courts, hospitals, and recreational and sport facilities. Infrastructure involves services such as energy, water supply, wastewater treatment, power and gas distribution grids, waste collection, and sewer disposal. Major advances in technology resulted in digital infrastructure that includes communication networks, signal transmission towers, data centers, information repositories, servers/computers, and the Internet. This course explores the progress humanity achieved in developing infrastructure facilities and the present move towards sustainability. Methods, materials, processes, technologies, practices, and operations required to maintain a healthy environment and efficient infrastructure will be examined. The intersection between policies necessary for sustainable infrastructure and political, economic, social, societal, and cultural factors will be emphasized. **CC:** SET, GETS **Lecture/Lab Hours** Four class hours weekly. **ISP:** ENS, STS

ENS 252 - Geoenvironmental Applications

Course Units: 1.0 This course introduces field applications related to soil and water. It explores the natural characteristics and testing of soil as a construction material and as a bearing layer. It covers seepage analysis, aquifers, and well fields. It details the components of containment systems for waste disposal to alleviate environmental pollution and contamination. It also presents the basics of water movement in closed conduits and in open channels, and the development of supply networks. For labs, students gain experience in utilizing industry-standard testing methods of the American Society for Testing and Materials (ASTM). Tests include soil classification, composition, flow and permeability, compaction, compressibility, strength, slope stability, and environmental geotechnology with focus on the Environmental Protection Agency's (EPA) design specifications. **Prerequisite(s):** MTH 112 or higher, and PHY 120 or higher. **Corequisite(s):** ENS 252L **CC:** SCLB **Lecture/Lab Hours** Three class hours and a weekly lab. **ISP:** ENS, STS

ENS 253 - Environmentally Friendly Buildings

Course Units: 1.0 Many energy consumption and adverse environmental effects are attributable to buildings and their use. In this course, through instructions, hands-on experience, computer simulation, and research, the students will become acquainted with the inner workings of the subsystems in buildings: foundations, framings, walls, sidings, roof, electrical systems, lighting, appliances, heating, air-conditioning, ventilation, indoor air quality, basement, crawl space, attic, water and moisture management; plumbing, flooring, finishes, furniture, insulation, xeriscaping, and LEED rating system. The students will become aware of indoor and outdoor environmental issues and the life cycle costs of the existing systems. They will also learn the latest science and technology to reduce the negative effect of these subsystems on the environment. Laboratory: hands-on experience with the above subsystems, site visits, Computer simulations, research, projects, and presentations. There are no prerequisites for this course and it is open to all students. **Corequisite(s):** ENS 253L **CC:** SET, GDQR, GETS, SCLB **ISP:** ENS, STS

ENS 277 - The Water Paradox

Course Units: 1.0 Fresh water is tasteless, odorless, and colorless. These characteristics make water one of the most intriguing materials. It is a necessity for life. A paradox involves features or qualities of contradictory nature. Water is notorious with such qualities. Water is one of the cheapest materials yet it is the most precious commodity known to humanity. Water could be the source of peace and development yet it could be a reason for war and conflict. Water could be a force for good to generate hydropower yet unchecked or unregulated this force could be in the form of destructive floods. Water could be a weapon to combat desertification yet too much thereof could cause erosion and

failures. Floods come with loads of mud and silt that charge river deltas and keep them fertile yet weaker floods result in lesser deposits that could threaten river deltas with sea attacks. Water has always been a main reason for people to settle the land yet a shortage thereof could force people to migrate and leave their homeland. This course shows the role water played in the past, is presently playing, and will play in the future in defining communities and societies. **CC:** SET, GETS **ISP:** ENS, STS

ENS 291 - Construction for Humanity

Course Units: 1.0 An interdisciplinary introduction to the technology of construction and the social uses of building by humans. The course will consider types of building materials and their application to domestic housing, castles, cathedrals, palaces, monuments, dams, bridges, tunnels, factories, and office buildings. **Cross-Listed:** HST 291 **CC:** SET, GETS **ISP:** ENS, STS

ENS 299 - Environmental Forensics

Course Units: 1.0 An interdisciplinary course that will present topics detailing the intersection between the environment, ethics, law, society, litigation, policy, economics, pollution/contamination, cleanup, testing, standards, and sustainability. Sources of environmental problems are usually related to emissions, pollution, contamination, and/or waste disposal. Whether the cause is intentional or non-intentional, natural factors or a man-made disaster, or due to normal operation or accident, a crisis ensues and cleanup becomes necessary. This inevitably leads to legal actions and litigations that rely on experts in conducting scientific investigations to establish the facts surrounding potential controversies. Topics discussed in the course include liability, environmental site assessment, insurance litigation, toxic torts, science tools, sampling & measurements, statistical analysis, chemical fingerprinting, contaminant transport models, and environmental forensic microscopy. The course will illustrate the above points using case studies. **CC:** SET, GETS, WAC **ISP:** ENS, STS

Geosciences:

GEO 106 - Introduction to Oceanography

Course Units: 1.0 The oceans cover 71% of the planet, 97% of the earth's available water, and 50% of the planet's species, but more than 95% of the ocean remains unexplored. This course covers physical, chemical, and biological oceanography. The course involves an examination of plate tectonics, ocean currents and the forces driving them, the role of the oceans in climate change, coastal processes and sea level change, biological productivity, and the ocean fishing industries. **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 109 - Global Climate Change

Course Units: 1.0

Global climate change is the defining environmental issue of our time. The impacts of climate change disproportionally affect populations who have contributed the least to atmospheric greenhouse gas loading. This course will review the basis for the overwhelming scientific consensus that ongoing warming is not natural; topics include: the radiation balance of Earth, the role of greenhouse gases on Earth's surface temperature, atmospheric and oceanic circulation, and natural oscillators in the climate system. A significant portion of the course is dedicated to understanding natural climatic variability. Students will prepare and submit policy briefs to policy makers at the federal, state, and/or local level that outline ways to mitigate and/or adapt to climate change. Preference given to first and second year students. **Corequisite(s):** GEO-109L
CC: SET, GNPS **ISP:** ENS, STS

GEO 110 - Introduction to Geosciences

Course Units: 1.0 Examination of Earth materials and processes: How our dynamic planet works including plate tectonics, geologic age determination, processes that form the rocks we see at the Earth's surface, development of the stunning variety of landscapes we see, and other topics of contemporary interest including floods, underground water resources, coastal erosion, earthquakes, landslides, volcanoes, and climate change. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 110L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 112 - Environmental Geology

Course Units: 1.0 The increasing interplay between the environment and human activity has profound effects on our landscape and society. This course focuses on anthropogenic issues such as climate change, soil and groundwater contamination, traditional petroleum resource extraction and dependence, mineral and water resources, and alterative sources of energy. To understand how humans have perturbed the natural environment, it is critical to understand geologic principles and processes. The course also explores natural disasters including earthquakes, volcanoes, hurricanes, landslides, floods, and coastal erosion and their effects on different segments of society, as the impacts of natural disasters are affected by various socio-economic factors. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 112L **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 115 - Intro to the Atmosphere

Course Units: 1 Weather and climate influence nearly every aspect of our lives, from tasks such as what clothes to wear to the spectacular sights of extreme events such as hurricanes and thunderstorms. However, human activities are increasingly altering the state of the atmosphere through the emission of greenhouse gasses and aerosols. In this course, we
will cover the foundational concepts of atmospheric science that are necessary to develop an intuitive understanding of weather and climate. We will then apply the basic principles
to explore the origins of extreme weather and global climate change. **Corequisite(s):** GEO 115L **CC:** GNPS **ISP:** ENS, STS,

GEO 117 - Natural Disasters

Course Units: 1.0 An introduction to the geologic processes causing floods, earthquakes, volcanoes, landslides, and other natural hazards and how hazards affect people and society. The course will include discussion of major events in the geologic and historical record as well as future hazard potential. We will assess the risks humans face in different regions, including local hazards, our contribution to geologic hazards, and how we can minimize and cope with future events. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 117L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 120 - The Story of Earth and Life

Course Units: 1.0 An investigation of Earth's dynamic history and evolutionary changes over the past 4.5 billion years. Topics include impacts of climate change, the evolution of life, major changes in the nature of Earth's atmosphere and oceans, and for major mountain building events that have affected the continents as well as the evolutionary development of plant and animal life as recorded in the geologic record. Specific topics include the origin of life, mass extinctions of dinosaurs and other organisms, paleoclimate, and the geologic history of New York State. The link between geology, chemical cycles and life is highlighted, as is the relation of past biogeochemical changes to current global environmental change. Field trips during lab investigate local geologic history and the course may require a weekend field trip. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 120L **CC:** SCLB, GNPS, SET **ISP:** ENS, STS

GEO 160 - Environmental Challenges in the Mohawk Watershed

Course Units: 1.0 This courses in an introductory course that investigates the complex intersection of surface-water hydrology and society. Specific modules address hydrology in a changing climate, water quality, dams and the Erie Canal, invasive species and pathways, municipal drinking water, floods, and river-proximal development: all environmental problems on the Mohawk related to water and hydrology in the watershed. While the Mohawk Watershed is of local and regional interest, the issues and problems addressed in this course are applicable nationwide. They deal with how a changing climate affects surface-water hydrology, how our national infrastructure and the built environment has been stressed due to age, damaging extreme events and pollution. We explore how our relationship with rivers is changing. This course is intended for all students at Union College, but it will be of special interest to those students interested in water, especially in the context of rivers, climate change, water infrastructure, and urban planning and development. **Prerequisite(s):** Preference is fiven to first and second year students. **Corequisite(s):** GEO 160L **CC:** SCLB, GNPS, GETS, WAC **ISP:** ENS

GEO 201 - Stratigraphy and Depositional Environments of New York

Course Units: 1.0 Tectonic events revealed through the stratigraphy and inferred depositional environments of the lower Paleozoic sedimentary rock sequences in eastern New York. Stratigraphic and sedimentologic concepts are explored through weekly field studies and comparison with modern depositional systems. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 201L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS

GEO 202 - Geomorphology

Course Units: 1.0 Processes operating on and near the Earth's surface are responsible for the development of landforms, and the evolution of these landforms through time. This course covers erosional and depositional processes of glaciers, rivers, hillslopes, and wind, and the geochemical reactions responsible for the formation of soils and caves. These topics are covered within the context of the geologic evolution of the Mohawk Valley since the end of the last Ice Age. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 202L **CC:** WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS

GEO 203 - Lakes and Environmental Change

Course Units: 1.0 Modern limnology and the record of environmental change as recorded in the physical and chemical properties of lake water and lake sediments. Includes a term-long research project on two local lakes, and the interpretation of the proxy paleoenvironmental indicators contained in sediment cores from these lakes. **Prerequisite(s):** Any 100-level geosciences or biology course or ENS 100 **Corequisite(s):** GEO 203L **ISP:** ENS

GEO 205 - Active Tectonics

Course Units: 1.0 This course explores the dynamics of active plate boundaries and plate motions as revealed in plate margin deformation, earthquakes, volcanic activity, and metamorphism. Includes an introduction to stress and strain, deformation mechanisms, faults and folds, geochronology, and petrology of distinct rocks in convergent settings. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **ISP:** ENS

GEO 206 - Volcanology

Course Units: 1.0 Volcanic eruptions showcase the beauty, complexity, and destructive forces of nature. This course tackles the questions of why volcanoes erupt (a fundamental question without universal agreement!), where they erupt, how they erupt, how we predict eruptions, and the effects of eruptions on societies. Case studies include famous eruptions such as Vesuvius, Yellowstone, Hawaii, and Mt. St. Helens, as well as some volcanoes being researched by Union faculty and students in the Caribbean, Pacific Northwest, and Mexico. Students learn the different ways that volcanoes are monitored (seismic, gas emissions, hydrothermal waters, deformation). The course highlights ongoing

current volcanic activity and monitoring and students engage in multiple role-playing exercises using data to forecast eruptions and deal with a volcanic crisis. Students will become more proficient in science communication and how to convey information to the public through videos, infographics, and other forms of media. This course will include a spring break trip to Kilauea volcano in Hawaii. All students must meet basic term abroad requirements and submit an application. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 206L **ISP:** ENS

GEO 207 - Stable Isotopes in Environmental Science

Course Units: 1.0 Stable isotopes have become a fundamental tool in many biogeoscientific studies, from reconstructing past climates to tracking animal migration or unraveling foodwebs and even to study the origin of life on Earth and possibly other planets. This course highlights the applications of stable isotopes in biological, ecological, environmental, archeological, and geological studies. Students learn the fundamentals of stable isotope biogeochemistry in order to understand the uses and limitations of this tool. This course starts with an introduction to the fundamentals of stable isotope geochemistry and then moves on to applied topics such as paleoceanography and paleoclimatology proxies, hydrology, sediments and sedimentary rocks, biogeochemical cycling, the global carbon cycle, photosynthesis, metabolism, ecology, organic matter degradation, pollution, and more. **Prerequisite(s):** Any geosciences, biology, or chemistry course or ENS 100 , or permission of the instructor. **Corequisite(s):** GEO 207L **CC:** WAC, GDQR, GNPS **ISP:** ENS

GEO 208 - Paleontology, Paleobiology, and Paleoecology

Course Units: 1.0 Nearly all species that have existed on Earth are now extinct and are only known through the fossil record. This course examines the evolution and history of life on Earth as interpreted from the fossil record. Topics include fossil preservation, taphonomy, ontogeny, diversity trajectories through geologic time, evolutionary mechanisms, extinction, paleobiology, paleoecology, and paleoclimate. Special emphasis will be placed on using fossils to interpret ancient environments as well as deciphering past climates. The course focuses on the fossil record of marine invertebrates, but major groups of vertebrates (such as dinosaurs) and plants are also covered. **Cross-Listed:** BIO 208 **Prerequisite(s):** Any geosciences or biology course or ENS 100 **Corequisite(s):** GEO 208L **CC:** SCLB **ISP:** ENS

GEO 209 - Paleoclimatology

Course Units: 1.0 Climate is fundamentally relevant to modern and ancient societies. Global warming is occurring today, and whether it is driven by human activities (e.g., CO2, CH4 emissions) or by natural climate cycles can only be determined by understanding natural climatic variability. Fortunately, there are many tools, and natural climatic records that can provide us with information on past climate (e.g. tree rings, ice cores from glaciers, and sediment cores from lakes and oceans). Obtaining, documenting and interpreting these records is the field of paleoclimatology, and it is the focus of this course. Past climate variability is used to highlight possible scenarios of future climate change. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 209L **CC:** SCLB **ISP:** ENS

GEO 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on Earth and serves as a vital resource that supports the economies and ecosystems of the world - including providing much of the irrigation water that grows our food, supplying drinking water to over 2 billion people, and sustaining surface water bodies and groundwater dependent ecosystems. With the world's groundwater resources threatened by intensive groundwater pumping, environmental and climate change, and the release of contaminants into the environment, there is a pressing need to better understand and manage this resource. Groundwater hydrology is a highly interdisciplinary field that brings together the geologic and environmental sciences with engineering. This course will begin by exploring the environmental and geologic factors that influence the occurrence and movement of groundwater. We will then delve into the physical laws the govern groundwater flow and learn how to model these flows. Later in the course we will cover the role of groundwater in a range of geologic and ecological processes. We will also cover engineering

applications of groundwater such as the hydraulics of pumping wells, land subsidence, and the movement of contaminants within aquifers. Students will leave this course with the fundamental knowledge needed to begin answering the scientific and engineering challenges related to our groundwater resources. **Cross-Listed:** ENS 210 **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 210L **CC:** GDQR, GETS, GNPS **ISP:** ENS

GEO 220 - Mineral Science

Course Units: 1.0 Mineral science is foundational for other geology and environmental science courses, as well as many other scientific disciplines that encounter crystalline solids. This class provides students with a solid understanding of minerals, which are the building blocks of all rocks on this and every other planet, and provide most of our industrial resources, many building materials and precious gems. A successful student leaving this class will be able to identify most common minerals when they occur "in the wild" and be familiar with their internal structure and crystal chemistry. The practical use of state-of-the- art analytical techniques common to the study of solid materials is emphasized to elucidate the links between internal crystalline structure and macroscopic physical properties. Students will use the scanning electron microscope, the x-ray diffractometer and the polarizing light microscope. In addition to learning the fundamentals of mineral science, students will gain appreciation for the beauty and symmetry present in the natural world. **Prerequisite(s):** CHM 101 or equivalent and any 100-level geosciences course. **Corequisite(s):** GEO 220L **ISP:** ENS

GEO 300 - Glacial and Quaternary Geology

Course Units: 1.0 The transformation of snow to ice, the mass balance of glaciers, types of glaciers, and the processes that control glacier sliding, erosion, and deposition. Includes techniques commonly employed to date Quaternary deposits and an examination of the geologic record of the Ice Ages as recorded in glaciers, glacial deposits, and marine and lake sediments of the Quaternary period. Weekly labs document the geologic record of the last glaciation in exposures in the southern Adirondacks, central Hudson Valley, eastern Mohawk Valley, and northern Schoharie Valley. **Prerequisite(s):** Any 200-level geosciences course, or permission of the instructor. **Corequisite(s):** GEO 300L **ISP:** ENS

GEO 302 - Geochemical Systems and Modeling

Course Units: 1.0 Investigation of the Earth as a chemical system and using chemical tools to understand geologic processes. Topics include origin of the elements, formation and differentiation of the Earth, igneous processes, radioactive isotopes and radiometric dating, and geochemistry of near-surface waters and the oceans. Work includes theory, sample collection, sample preparation, chemical analysis using in-house equipment, and computer modeling of the using the acquired data. Includes readings and discussions of the contemporary geochemical literature. **Prerequisite(s):** CHM 101 or equivalent **Corequisite(s):** GEO 302L **ISP:** ENS

GEO 305 - Global Biogeochemical Cycles

Course Units: 1.0 Biology, geology and chemistry are intricately linked to form the world around us. Biogeochemical cycles set the stage for life on Earth. This course explores the carbon, nitrogen, water, phosphorus, and sulfur cycles in the critical zone and oceans. The critical zone is the terrestrial layer that extends from the bedrock to the top of vegetation, and this course continues into estuaries and the open ocean. We investigate how biological (e.g., primary production, respiration), anthropogenic (e.g., urbanization, pollution) and geological processes (e.g., tectonics, rock weathering) influence the critical zone and oceans, and in turn how these cycles influence life and climate. Field studies focus on tropical marine biogeochemistry of coral reefs, mangrove forests, seagrass meadows, lagoons and estuaries. Course includes a required week-long field trip to a remote field station in Panama. There are additional costs associated with field trip expenses, but students can apply for travel assistance. All students must meet basic term abroad requirements and submit an application. This course is open to all students, but preference will be given to those with a declared major in geosciences, environmental science, chemistry, or biology. **Cross-Listed:** BIO

235 **Corequisite(s):** GEO 305L **Prereq/Corequisite(s):** Take a course from either BIO, CHM, GEO or ENS 100 . **CC:** WAC, WAC-R **ISP:** ENS

GEO 355T - Living on the Edge

Course Units: 1.0 This course is a mini-term abroad. The field study of earthquakes, volcanoes, glaciers, and other hazards where tectonic plates collide and mountains form. Field studies focus on understanding the science behind geologic hazards that lead to catastrophic events and subsequent loss of life. Fieldwork is aimed at recognizing hazards, understanding the processes behind the hazards, and to see the role that society plays in mitigating these hazards. The study area alternates around the Pacific Rim between locations that include Peru (June), Alaska (June), and New Zealand (December). Fieldwork is preceded by organizational sessions on campus to prepare for field projects. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **ISP:** ENS

Policy/Humanities Courses

Art History:

AAH 260 - Nature, Art, and the Environment

Course Units: 1.0 This course studies attitudes toward nature in Western Europe and North America from the Middle Ages through the 20th century. We will be examining cultural and artistic ideas related to the natural world, noting both continuity and change. In keeping with the interdisciplinary nature of the course, we will be examining such diverse sources as religion, literature and the printed book, gardens and landscape art, painting and printmaking, the history of botany, botanical art and scientific illustration, exploration and travel, climate and geography, agriculture and industrialization, and the development of "ecology". **CC:** HUM **ISP:** ENS

AAH 265 - Environmentalism and Globalization in Contemporary Art

Course Units: 1.0 This course examines artistic practices that meld science, aesthetics, and politics in imaginative and critical ways as they address environmentalism and globalization. The course primarily focuses on 21st century artists whose work takes on such subjects as pollution, biodiversity, sustainability and climate change. We will consider the blurring of the boundaries between art and activism and the many art genres and strategies used to address these issues from photography and sculpture to community collaborations and public art. **CC:** HUM, GCAD, GCHF, GSPE **ISP:** AMS, ENS, STS

Visual Arts:

AVA 345 - The Illustrated Organism

Course Units: 1.0 This studio course is the cross-section of common themes found in fine arts and biology, using art as a way of exploring science. The biological question of how evolution influences the relationship between structure and function will be addressed by exploring the use of color, light and structural logic with the goal of creating a world of your own. The course will culminate in an exhibition of artwork with corresponding texts by the student artists describing the connection between the art and science. Taught jointly by biology and visual arts. Apply through participating departments. **Cross-Listed:** BIO 345 **CC:** HUM, SCLB **ISP:** ENS

Anthropology:

ANT 241 - Environmental Anthropology

Course Units: 1.0 This course examines anthropological approaches to the environment and environmentalism. It asks questions such as: How does culture shape our perception of nature? What can conflicts over environmental protection, natural resources and human manipulations of natural materials tell us about contemporary societies? What does it mean to call an issue "political" or "cultural," versus "scientific" or "technical"? Students will develop the critical analysis skills to examine the natural world as a site of cultural politics, using anthropological concepts to examine environmentalism in diverse geographical and historical settings, including the Amazon, the Niger Delta, the suburban mall, and the Union campus. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** ENS, STS

Classics:

CLS 153 - The Environment in the Ancient World

Course Units: 1.0 Students will discover how ancient Mediterranean societies interacted with the natural world, as revealed by history, art and literature, and archaeology. Some of the questions we will investigate include: how did the Mediterranean environment affect and determine everyday life, both in cities and in rural areas? How did ancient societies manage their food supply? What was their view of nature? How did they react to ecological crisis? And, finally, how can we use their outlook on and treatment of the environment to inform our own approach? **CC:** HUM, LCC, GCHF **ISP:** ENS, STS

CLS 191 - Ancient Engineering

Course Units: 1 How did people living in the ancient Mediterranean region physically transform the world around them, and what do those transformations tell us about their values and beliefs? We'll examine major engineering successes (and failures) such as temples, aqueducts, catapults, and more, using multiple forms of evidence, from archaeology, visual imagery, and inscriptions, to re-enactment and 3D modeling. **CC:** HUM, GETS **ISP:** ENS

Economics:

ECO 228 - Environmental and Natural Resource Economics

Course Units: 1.0 Economic causes of environmental degradation and natural resource depletion; benefit-cost analyses of public policies for environmental protection and natural resource preservation; specific issues in energy and wilderness resource management, air and water pollution abatement, and solid waste management. **Prerequisite(s):** ECO 101 or permission of instructor. **CC:** SOCS **ISP:** STS, ENS

English:

EGL 271 - Dark Deeds: Crime in the Adirondacks

Course Units: 1.0 Merriam Webster defines a crime as an illegal act for which someone can be punished by the government; especially: a gross violation of law. A crime, however, is also defined in moral and ethical terms, as a grave offense, especially against morality; something reprehensible, foolish, or disgraceful. Students in this course will explore a variety of literary and historical illustrations of each of these types of crimes as they have occurred in the Adirondack Mountains throughout history. As we investigate various illegal acts in the Adirondacks, we will also examine underlying moral crimes, such as poverty and economic depression, which have the potential to lead individuals toward a life of crime. We will explore Chester Gillette's 1906 murder of Grace Brown at Big Moose Lake and the highly sensationalized murder trial that ensued, alongside Theodore Dreiser's 1925 novel that was based on the murder and criminal case. We will analyze the prison system in the Adirondacks, and we'll investigate various mobsters who stayed in Saratoga Springs during the Prohibition Era. We will also explore the crime of contagion as we read works written about tuberculosis and various sanatoriums in Saranac Lake. Part of our class time will be held at the

Kelly Adirondack Center (KAC), working in the Adirondack Research Library. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, ENS, LAW

EGL 272 - Indigenous Sovereignty: Indigiqueer and Two-Spirit Voices

Course Units: 1.0 Students will consider literary works from several Native American writers who challenge white privilege and modes of possession. Texts will support place consciousness and tribal revitalization through an intergenerational awareness of intercultural dialogue. The course will focus on Indigenous counter-narratives that endeavor to dislodge the dominance of canonical white writers and, using a queer theoretical lens, will explore ways to reframe binary heteronormative practices.Course readings will focus on the consequences of dualistic thinking, colonization, and Eurocentric ideals. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **ISP:** ENS

EGL 280 - Nature and Environmental Writing

Course Units: 1.0 This course will focus on the traditions of nature and environmental writing in the American context, with an emphasis on the social and cultural dynamics of the environment and environmental action. Among other questions, we will ask ourselves: How do class, gender, and race enter into the nexus of social interactions that shape our environment? What is the place of literature in community, literacy, and environmental activism? What are the connections between the ways we speak and write about the environment and our actions toward the environment? How does the wilderness concept affect the ways citizens have access to public spaces? We will consider the concept of "nature" as we move through the course, culminating (if you like) with some nature writing of your own. Readings may include Thoreau; Carson; Leopold; Kingsolver, and selections from *Reading the Roots: American Nature Writing Before Walden*; *Colors of Nature*; Lauret Savoy, T*race: Memory, History, and the American Landscape*; and F. Marina Schauffler, *Turning to Earth: Stories of Ecological Conversion.* **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, ENS, STS

EGL 281 - Environmental Psychology and the American Literary Landscape

Course Units: 1.0 Environmental research psychologist Maria Vittoria Giuliani emphasizes that human-to-place attachments "not only permeate our daily life but very often appear also in the representations, idealizations and expressions of life and affect represented [in] literature." Indeed, many literary works emphasize humanity's basic attachment needs and the importance person-to-place bonds have in the development of the human psyche. American fiction writers frequently employ descriptions of American landscapes as inspiration for character and plot development, and American nature writers often emphasize the way in which wilderness environments may influence one's mental and physical health and emotional well-being. In fact, recent studies in the field of cognitive neuroscience provide empirical evidence to substantiate the theory that exposure to a natural environment may actually generate structural changes in the brain by increasing oxygenation and blood flow that occur in response to neural activity. Hence, this course will employ contemporary studies in place attachment, environmental psychology, and cognitive neuroscience to examine the way in which various literary works illustrate the important role environment plays in aiding or obstructing one's ability to think, reason, remember, problem-solve, process information, use language, or be creative. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, ENS

Environmental Science, Policy, and Engineering:

ENS 222 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** MLT 209 **CC:** LCC, SET, HUM, HUL, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

ENS 242 - Comparative Climate Change Politics

Course Units: 1 This past year we have seen historic temperature records and heatwaves across the globe, the impacts of wildfires around the country and locally, and periods of drought and
extreme storms in different areas. These have been attributed to or amplified by anthropogenic climate change, which is one of the biggest challenges facing society in
the 21 st century. This course examines why climate change is such a "wicked problem", and why it is so difficult to address effectively. The barriers to addressing climate change are not just technical and scientific, but also political and social. Thinking about a future where we as a society mitigate the worst impacts of climate change this century, and adapt to other impacts entails navigating different political systems around the world and balancing various geopolitical and economic interests. Through this course, we will examine how these factors shape or constrain efforts to address climate change in Western Europe, the United States, China, India, and other parts of the world. We will also examine how climate change is impacting human life and security in these countries and other parts of the world, and how it may amplify existing inequalities and other crises. **ISP:** ENS

ENS 263 - U.S. Environmental Policy

Course Units: 1 This course examines the emergence, development, and future directions of environmental policy within the United States. It covers early environmental policy achievements such as the Clean Air Act, the reasons for federal inaction on environmental policy since the 1990s, and new directions for policy action in the 21st century as society understands how to mitigate and adapt to climate change. **CC:** LCC, SOCS **ISP:** AFR, AMS, ENS

ENS 264 - Climate Communication

Course Units: 1 **Cross-Listed:** PSC 264

ENS 291 - Construction for Humanity

Course Units: 1.0 An interdisciplinary introduction to the technology of construction and the social uses of building by humans. The course will consider types of building materials and their application to domestic housing, castles, cathedrals, palaces, monuments, dams, bridges, tunnels, factories, and office buildings. **Cross-Listed:** HST 291 **CC:** SET, GETS **ISP:** ENS, STS

ENS 302 - U.S. Energy Policy

Course Units: 1 Transitions to zero-carbon sources of energy are a critical part of addressing climate change globally. Within various parts of the United States, this transition has been slow and involved a number of political conflicts. Fossil fuel corporations, energy interest groups, and several other actors have fought over the direction of energy policy, with these battles largely occurring at the state and local levels. This class explores these relationships and conflicts to understand the battles over a clean energy transition in the United States and the implications for addressing climate change. **Cross-Listed:** PSC 302 **CC:** SOCS **ISP:** ENS, STS

Gender, Sexuality, & Women's Studies

GSW 200 - Beyond Woman/Body/Nature: Ecofeminism, Systems Theories, and Social Activism

Course Units: 1 This course's exploration of ecofeminism, systemic theories, and social justice activism and practices analyzes how paradigms and historical inequalities have devalued both 'women' and 'nature,' leading to the oppression and denigration of both. As a movement that draws linkages between environmental issues and intersectional feminist concerns, ecofeminism asserts that solutions to environmental problems require a feminist perspective, and contemporary feminist theory and practice require an environmental perspective. **CC:** SOCS, GLIT **ISP:** ENS

History:

HST 109 - History of Sustainability

Course Units: 1.0 Sustainability. You now find the word just about everywhere. For more than a few people it has become the defining mission of their generation, an existential challenge that must be met for the survival of humanity. This is a course in thematic global history that explores the concept of sustainability from an historical perspective. Sustainability is not a new thing in human history or just a consequence of our environmentally-challenged present. Sustainability is part of our cultural inheritance with deep roots in the histories of Asia, the Americas, Europe, and Africa. Also, sustainability is not simply synonymous with environmentalism or climate change. It has always encompassed social realities like power, trade and commerce, cultural identities, human relationships to science and technology, and much more. Sustainability is a history of the societies we create and the values that define them, for good or ill. Ultimately, the history of sustainability is an opportunity to reflect on the nature of our humanity and the ideals that empower a just future. We will explore sustainability's history through primary texts, analyses of the concept across time and space, the study of sustainability challenges - successes and failures - in past societies, and contemporary realties faced by peoples across the globe, whether in the megacities of China and Latin America or the urban gardens of Detroit and the green housing cooperatives of Berlin. **CC:** LCC, SOCS, GCHF **ISP:** ENS

HST 138 - Big History

Course Units: 1.0 An exploration of the past from the big bang to the present, dividing the history of the universe, earth, life, and humanity into periods using very large scales of time. **CC:** SOCS, GCHF **ISP:** ENS, STS

HST 206 - Environmental Histories of Empire

Course Units: 1.0 This course will explore histories of empire in comparative perspective. It provides students with an introduction to global environmental history by focusing on the changing relationships between people and their natural environments. It takes a transnational approach, exploring various case studies drawn from different imperial settings and temporalities. We will look at the development of early states, the growth of the capitalist world economy in the Atlantic, successive periods of empire-building in Africa and Asia, new forms of resource extraction and changing commodity flows, and environmental politics, while placing the natural world at the center of our analysis. In this course, we will use a more expansive definition of imperialism to include not only formal territorial empires, but also informal economic ones and various post-colonial forms of domination. Other themes to be explored will be: changing perceptions of the natural world, industrialization, warfare, urbanization, technological transformations, and changes in production and consumption. The goal is that students will develop of better understanding of the modern world and the ways in which humans have radically changed their natural environments. **CC:** LCC **ISP:** AFR, ENS

HST 225 - American Environmental History

Course Units: 1.0 This course aims to give students the knowledge and the tools to think critically about how history has shaped the present state of the earth and human relationships with it. It focuses on the history of man's interaction

with nature on the North American continent, with a particular focus on the area that would become the United States, from precolonial times until the present. **CC:** SOCS **ISP:** AMS, ENS

HST 229 - The Adirondacks and American Environmental History

Course Units: 1.0 The Adirondack region of northern New York Slate has been a proving ground for shifting American attitudes toward the environment, from early colonial (ears of wilderness, to intensive resource exploitation, and to efforts to conserve natural resources and preserve distinctive wilderness areas. This course will examine Adirondack environmental history and place it in the context of broader American environmental history. It will leverage Union College's proximity to the region, and the resources of the Union College Kelly Adirondack Center, to offer students both intellectual and experiential engagement with the history of this distinctive place. **CC:** SOCS **ISP:** AMS, ENS, STS

HST 291 - Construction for Humanity

Course Units: 1.0 An interdisciplinary introduction to the technology of construction and the social uses of building by humans. The course considers types of building materials and their application to domestic housing, castles, cathedrals, palaces, monuments, dams, bridges, tunnels, and skyscrapers. **Cross-Listed:** ENS 291 **CC:** SET, SOCS, GETS **ISP:** ENS, STS

- HST 299 - The Nuclear Age

Philosophy:

PHL 273 - Environmental Ethics

Course Units: 1.0 An exploration of the ethical and philosophical ideas that have shaped attitudes toward the environment and toward non-human species. **CC:** HUM **ISP:** ENS, STS

PHL 274 - Biomedical Ethics

Course Units: 1.0 An introduction to ethical problems in biology and medicine, touching on such issues as reproductive ethics (abortion, cloning), research ethics, the ethics of death and dying (assisted suicide, euthanasia) and similar subjects. **CC:** HUM **ISP:** STS

Political Science:

PSC 272 - The Environment, Energy, and US Politics

Course Units: 1.0 Examination of how politics and policymaking affect the air we breathe, the water we drink, and the land we live on. This course will explore key U.S. environmental issues and their scientific underpinnings as well as the connections between these issues and our collective use of natural resources. The course will review major pieces of federal environmental law in the United States and address the policy considerations, justifications, and regulatory frameworks underlying them, as well as the effectiveness of these laws in achieving a healthier environment. The course will also examine the respective roles of Congress, the executive agencies, and the courts in determining environmental policy. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, STS

PSC 302 - U.S. Energy Policy

Course Units: 1

Considers the protections afforded to individual rights and liberties by the U.S. Constitution and the Bill of Rights. Topics include freedom of speech and assembly, the right to privacy, religious freedom, equal protection and discrimination, and the due process rights of those accused of crimes. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **Cross-Listed:** ENS 302 **Prerequisite(s):** PSC 111 or PSC 112
CC: SOCS, JCHF, JSPE **ISP:** AMS, ENS, STS

PSC 242 - Comparative Climate Change Politics

Course Units: 1 This year we have seen historic temperature records and heatwaves across the globe, the impacts of wildfires around the country and locally, and periods of drought and extreme storms in different areas. These have been attributed to or amplified by anthropogenic climate change, which is one of the biggest challenges facing society in the 21st century. This course examines why climate change is such a "wicked problem," and why it is so difficult to address effectively. The barriers to addressing climate change are not just technical and scientific, but also political and social. Thinking about a future where we as a society mitigate the worst impacts of climate change this century, and adapt to other impacts entails navigating different political systems around the world and balancing various geopolitical and economic interests. Through this course, we will examine how these factors shape or constrain efforts to address climate change in Western Europe, the United States, China, India, and other parts of the world. We will also examine how climate change is impacting human life and security in these countries and other parts of the world, and how it may amplify existing inequalities and other crises. **ISP:** ENS, STS

PSC 263 - US Environmental Policy

Course Units: 1 This course examines the emergence, development, and future directions of environmental policy within the United States. It covers early environmental policy achievements such as the Clean Air Act, the reasons for federal inaction on environmental policy since the 1990s, and new directions for policy action in the 21st century as society understands. **ISP:** ENS, STS

Sociology:

SOC 260 - Population and Society: Demographic Trends

Course Units: 1.0 An introduction to the study of human populations and the dynamics of birth, death and migration. Focus on how populations grow and decline and the implications for social policy in areas such as health, aging, social inequality, the environment, immigration and urban life. **Prerequisite(s):** SOC 100 **ISP:** ENS

SOC 271 - Sociology of Disaster

Course Units: 1.0 This course is an introduction to the sociological analysis of disasters. We will consider how sociologists conceptualize and theorize about disasters and the social and physical damage, death and injury, and economics loss they involve. Variations in the vulnerability of communities and particular social groups to such events will also be examined. **Prerequisite(s):** SOC 100 **ISP:** ENS

SOC 359 - Environmental Policy and Resource Management

Course Units: 1.0 An examination of environmental issues and problems such as acid rain, ocean dumping, and nuclear wastes, and the social forces that shape environmental policies. Students complete an internship with an environmental service theme. **CC:** SOCS **ISP:** ENS, STS

SOC 370 - Public Health

Course Units: 1.0 An overview of public health with emphasis on the impact of large-scale social and cultural forces on the health of the public. The epidemiology of selected diseases, injuries, and the addictive disorders; the health effects of exposure to environmental and work place toxins; the role of nutrition in health. **ISP:** ENS, STS

SOC 450 - Environmental Services and Policy

Course Units: 1.0 The focus of this seminar is on the implementation of different environmental policies. Internships or case studies of environmental organizations, including NYS Department of Environmental Conservation, are part of the course. **Prerequisite(s):** SOC 100 **CC:** SOCS, WAC, WAC-R, WS **ISP:** ENS

Spanish

SPN 334 - Cartographies of Disasters

Course Units: 1.0 The association between Latin America and catastrophe paints a unidimensional picture that does not correlate with the region's political, social, and geographical reality. With its history of colonialism, natural disasters, civil wars, dictatorships, and economic and political crises, Latin America is repeatedly constructed on the myth of disaster--whether natural or man-made. Disaster, by definition, is a serious disruption that causes great damage and involves human, material, economic and/or environmental loss. As such, it oftentimes leaves no room for discussion even if what constitutes a disaster can be subjective. In this class, we will tease out the problematic association between disaster and Latin America by exploring the effects of a disaster beyond the physical. Through concrete examples and its cultural representations, we will study the ways in which disaster is defined and experienced while analyzing its implications, political and otherwise. By drawing connections between disasters, their representations, and their relationship to politics and history, we will discuss issues including identity, class, power, extraction, and accessibility. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUM, WAC **ISP:** ENS, GSWS, LAS

Terms Abroad:

REE 300T - Conflict in the Post-Soviet Space: Armenia

Course Units: 1 This course introduces the general theories of conflict and conflict resolution and then focuses on a select number of conflicts in the Post-Soviet Space (PSS) in depth (case studies). Special attention will be paid to the links between the state policy and conflicts, conflict resolution, and conflict prevention as well as the connection between these conflicts and international terrorism, the future of conflict prevention and preventive diplomacy, and the processes of integration and disintegration in the PSS. Taught in Armenia. **CC:** JCHF, JSPE **ISP:** ENS

TAB 321T - Buenos Aries Mini-term

Course Units: **ISP:** GSWS, LAS

TAB 333T - New Zealand Mini-Term Abroad

Course Units: 1 **CC:** LCC **ISP:** ENS

Environmental Science, B.S.

Requirements for the Major in Environmental Science

Includes ENS 100, 11-13 science courses; two quantative reasoning courses; two policy courses; senior seminar, and one to three thesis (research) or senior writing credits, for a total of 17-20 courses. Specific requirements are listed below. Please note that students may not develop an ID major with Environmental Science.

A. Seven to nine required core courses

Core Course:

ENS 100 - Introduction to Environmental Studies

Course Units: 1.0 An introduction to environmental studies from a scientific, policy, and engineering perspective. This course covers human-environment interactions, with a focus on the impacts of human activities on natural systems such as climate, air, water, and species diversity and the ensuing environmental injustice. The course discusses sustainable solutions for how we can build systems that will support billions of humans and the natural world. Fieldwork during lab periods involves the investigation of local environmental problems and solutions. This course is intended for first- and second-year Environmental Science and Environmental Policy majors, but it is open to all students. **Corequisite(s):** ENS 100L **CC:** SCLB, GNPS **ISP:** ENS, STS

Biology Requirements:
Take:

BIO 103 - Diversity of Life: Heredity, Evolution, and Ecology

Course Units: 1.0 More than 3.5 billion years of evolution have resulted in the astonishing diversity of life on earth. This course will explore biodiversity through the lens of ecology, evolution, and heredity, and will investigate various topics, including: the history of life on Earth, evolutionary change, Mendelian & non-Mendelian inheritance, as well as human impacts on biodiversity and ecological functioning. These processes will be studied in the lab using animal model systems, computer simulations, observations of diversity, and molecular techniques. Students will learn experimental design, data analysis, scientific writing, and various laboratory skills during weekly lab sessions. **Corequisite(s):** BIO 103L **CC:** SCLB, GNPS **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 104. **ISP:** ENS

And choose one from the following:

BIO 320 - Ecology w/lab

Course Units: 1.0 Organisms and their environment, population and community ecology, and the structure and integration of ecosystems will be discussed along with a focus on animal community ecology. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 320L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS **Note:** There may be field trips requiring scheduling outside of normal class time.

BIO 322 - Conservation Biology w/lab

Course Units: 1.0 Natural ecosystems have suffered from declining biodiversity and encroaching human development. In this course, you will examine how these alterations impact populations and ecosystems and will evaluate management strategies designed to facilitate long-term sustainability. Topics include genetics and population biology of rare species, threats to biodiversity and adaptive ecosystems management. **Prerequisite(s):** BIO 103 and BIO 104 or permission of instructor. **Corequisite(s):** BIO 322L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 324 - Plant Ecology w/lab

Course Units: 1.0 Examines the factors that affect the distribution and abundance of plants including the availability of water or nutrients, interactions with neighboring plants or animals, and the frequency of disturbances such as fires. Topics also include such environmental issues as climate change, exotic species invasions, the conservation of rare species, and the benefits of urban nature for human health. The weekly lab includes field excursions and quantitative data analysis. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 324L **CC:** SCLB, WAC-R, GDQR, GNPS **Lecture/Lab Hours** One lab per week. **ISP:** ENS

GEO 305 - Global Biogeochemical Cycles

Course Units: 1.0 Biology, geology and chemistry are intricately linked to form the world around us. Biogeochemical cycles set the stage for life on Earth. This course explores the carbon, nitrogen, water, phosphorus, and sulfur cycles in the critical zone and oceans. The critical zone is the terrestrial layer that extends from the bedrock to the top of vegetation, and this course continues into estuaries and the open ocean. We investigate how biological (e.g., primary production, respiration), anthropogenic (e.g., urbanization, pollution) and geological processes (e.g., tectonics, rock weathering) influence the critical zone and oceans, and in turn how these cycles influence life and climate. Field studies focus on tropical marine biogeochemistry of coral reefs, mangrove forests, seagrass meadows, lagoons and estuaries. Course includes a required week-long field trip to a remote field station in Panama. There are additional costs associated with field trip expenses, but students can apply for travel assistance. All students must meet basic term abroad requirements and submit an application. This course is open to all students, but preference will be given to those with a declared major in geosciences, environmental science, chemistry, or biology. **Cross-Listed:** BIO 235 **Corequisite(s):** GEO 305L **Prereq/Corequisite(s):** Take a course from either BIO, CHM, GEO or ENS 100 . **CC:** WAC, WAC-R **ISP:** ENS

Chemistry Requirements:

CHM 101 - Introductory Chemistry 1

Course Units: 1.0 This is an introductory course that focuses on atomic and molecular structure, chemical bonding, stoichiometry, aqueous chemical reactions, and the properties of gases, liquids, solids and solutions. **Prerequisite(s):** Not open to students who have scored 4 or 5 on the AP Chemistry Exam or who have completed CHM 110H . All students who wish to enroll in an introductory chemistry course must take a placement examination to determine the appropriate course. See Course Selection Guidelines for more information on placement. **Corequisite(s):** CHM 101L **CC:** SCLB **Lecture/Lab Hours** Three lab hours/week,6/10 weeks. **ISP:** ENS

And choose one from the following:

CHM 102 - Introductory Chemistry 2

Course Units: 1.0 A continuation of CHM 101 , focusing on thermodynamics, chemical kinetics, chemical equilibrium, acids and bases, electrochemistry, and an introduction to organic chemistry. **Prerequisite(s):** CHM 101 or placement via the placement exam. **Corequisite(s):** CHM 102L **Prereq/Corequisite(s):** Not open to students who have taken CHM 110H . **CC:** SCLB, GNPS **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

GEO 207 - Stable Isotopes in Environmental Science

Course Units: 1.0 Stable isotopes have become a fundamental tool in many biogeoscientific studies, from reconstructing past climates to tracking animal migration or unraveling foodwebs and even to study the origin of life on Earth and possibly other planets. This course highlights the applications of stable isotopes in biological, ecological, environmental, archeological, and geological studies. Students learn the fundamentals of stable isotope biogeochemistry in order to understand the uses and limitations of this tool. This course starts with an introduction to the fundamentals of stable isotope geochemistry and then moves on to applied topics such as paleoceanography and paleoclimatology proxies, hydrology, sediments and sedimentary rocks, biogeochemical cycling, the global carbon

cycle, photosynthesis, metabolism, ecology, organic matter degradation, pollution, and more. **Prerequisite(s):** Any geosciences, biology, or chemistry course or ENS 100 , or permission of the instructor. **Corequisite(s):** GEO 207L **CC:** WAC, GDQR, GNPS **ISP:** ENS

GEO 302 - Geochemical Systems and Modeling

Course Units: 1.0 Investigation of the Earth as a chemical system and using chemical tools to understand geologic processes. Topics include origin of the elements, formation and differentiation of the Earth, igneous processes, radioactive isotopes and radiometric dating, and geochemistry of near-surface waters and the oceans. Work includes theory, sample collection, sample preparation, chemical analysis using in-house equipment, and computer modeling of the using the acquired data. Includes readings and discussions of the contemporary geochemical literature. **Prerequisite(s):** CHM 101 or equivalent **Corequisite(s):** GEO 302L **ISP:** ENS

OR

CHM 110H - Honors Introductory Chemistry

Course Units: 1.0 A laboratory-intensive course that covers the main topics of CHM 101 and CHM 102 and is meant to replace those courses for students who have strong backgrounds in introductory chemistry. **Prerequisite(s):** Students who have scored 4 or 5 on the AP chemistry exam will be automatically placed into CHM 110H; see Course Selection guidelines for more information on placement. **CC:** SCLB, GNPS **ISP:** ENS **Note:** Students who have scored 4 or 5 on the AP chemistry exam or who successfully complete CHM 110H will also receive AP credit for CHM 101 .

Geosciences Requirement:
Choose one of the following:

GEO 106 - Introduction to Oceanography

Course Units: 1.0 The oceans cover 71% of the planet, 97% of the earth's available water, and 50% of the planet's species, but more than 95% of the ocean remains unexplored. This course covers physical, chemical, and biological oceanography. The course involves an examination of plate tectonics, ocean currents and the forces driving them, the role of the oceans in climate change, coastal processes and sea level change, biological productivity, and the ocean fishing industries. **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 109 - Global Climate Change

Course Units: 1.0

Global climate change is the defining environmental issue of our time. The impacts of climate change disproportionally affect populations who have contributed the least to atmospheric greenhouse gas loading. This course will review the basis for the overwhelming scientific consensus that ongoing warming is not natural; topics include: the radiation balance of Earth, the role of greenhouse gases on Earth's surface temperature, atmospheric and oceanic circulation, and natural oscillators in the climate system. A significant portion of the course is dedicated to understanding natural climatic variability. Students will prepare and submit policy briefs to policy makers at the federal, state, and/or local level that outline ways to mitigate and/or adapt to climate change. Preference given to first and second year students. **Corequisite(s):** GEO-109L
CC: SET, GNPS **ISP:** ENS, STS

GEO 110 - Introduction to Geosciences

Course Units: 1.0 Examination of Earth materials and processes: How our dynamic planet works including plate tectonics, geologic age determination, processes that form the rocks we see at the Earth's surface, development of the stunning variety of landscapes we see, and other topics of contemporary interest including floods, underground water

resources, coastal erosion, earthquakes, landslides, volcanoes, and climate change. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 110L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 112 - Environmental Geology

Course Units: 1.0 The increasing interplay between the environment and human activity has profound effects on our landscape and society. This course focuses on anthropogenic issues such as climate change, soil and groundwater contamination, traditional petroleum resource extraction and dependence, mineral and water resources, and alterative sources of energy. To understand how humans have perturbed the natural environment, it is critical to understand geologic principles and processes. The course also explores natural disasters including earthquakes, volcanoes, hurricanes, landslides, floods, and coastal erosion and their effects on different segments of society, as the impacts of natural disasters are affected by various socio-economic factors. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 112L **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 115 - Intro to the Atmosphere

Course Units: 1 Weather and climate influence nearly every aspect of our lives, from tasks such as what clothes to wear to the spectacular sights of extreme events such as hurricanes and thunderstorms. However, human activities are increasingly altering the state of the atmosphere through the emission of greenhouse gasses and aerosols. In this course, we
will cover the foundational concepts of atmospheric science that are necessary to develop an intuitive understanding of weather and climate. We will then apply the basic principles
to explore the origins of extreme weather and global climate change. **Corequisite(s):** GEO 115L **CC:** GNPS **ISP:** ENS, STS,

GEO 117 - Natural Disasters

Course Units: 1.0 An introduction to the geologic processes causing floods, earthquakes, volcanoes, landslides, and other natural hazards and how hazards affect people and society. The course will include discussion of major events in the geologic and historical record as well as future hazard potential. We will assess the risks humans face in different regions, including local hazards, our contribution to geologic hazards, and how we can minimize and cope with future events. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 117L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 120 - The Story of Earth and Life

Course Units: 1.0 An investigation of Earth's dynamic history and evolutionary changes over the past 4.5 billion years. Topics include impacts of climate change, the evolution of life, major changes in the nature of Earth's atmosphere and oceans, and for major mountain building events that have affected the continents as well as the evolutionary development of plant and animal life as recorded in the geologic record. Specific topics include the origin of life, mass extinctions of dinosaurs and other organisms, paleoclimate, and the geologic history of New York State. The link between geology, chemical cycles and life is highlighted, as is the relation of past biogeochemical changes to current global environmental change. Field trips during lab investigate local geologic history and the course may require a weekend field trip. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 120L **CC:** SCLB, GNPS, SET **ISP:** ENS, STS

GEO 160 - Environmental Challenges in the Mohawk Watershed

Course Units: 1.0 This courses in an introductory course that investigates the complex intersection of surface-water hydrology and society. Specific modules address hydrology in a changing climate, water quality, dams and the Erie Canal, invasive species and pathways, municipal drinking water, floods, and river-proximal development: all

environmental problems on the Mohawk related to water and hydrology in the watershed. While the Mohawk Watershed is of local and regional interest, the issues and problems addressed in this course are applicable nationwide. They deal with how a changing climate affects surface-water hydrology, how our national infrastructure and the built environment has been stressed due to age, damaging extreme events and pollution. We explore how our relationship with rivers is changing. This course is intended for all students at Union College, but it will be of special interest to those students interested in water, especially in the context of rivers, climate change, water infrastructure, and urban planning and development. **Prerequisite(s):** Preference is fiven to first and second year students. **Corequisite(s):** GEO 160L **CC:** SCLB, GNPS, GETS, WAC **ISP:** ENS

Quantitative Reasoning Requirement:

Take:

ENS 204 - Geographic Information Systems

Course Units: 1.0 An introduction to Geographic Information Systems (GIS) technology and its practical uses. Topics include history of GIS, geographic data types, primary data structures, system design, map coordinate systems, data sources, metadata, census data, geographic coding and address matching, digitizing, remote sensing imagery, measures of data quality, and needs assessment. An emphasis will be on hands-on instruction using GIS software (ArcView). Students will work with ArcView throughout the term to complete assignments and a class project. Focus areas include archeology, electric and gas utilities, surveying, health and human services, insurance, law enforcement and criminal justice, media and telecommunications, transportation, water and wastewater, and natural resources. The ultimate goal is to use the spatial component of data in conducting analysis and making decisions. **Prerequisite(s):** A good background in the use of modern computer software. **Corequisite(s):** ENS 204L **CC:** SET, GETS **Lecture/Lab Hours** Two class hours and two lab hours weekly. **ISP:** ENS, STS

And choose one of the Following (note that is is recommended to use the Calculus option MTH 105/112, 110/112 or 113, especially if you are considering graduate school):

MTH 105 - Differential Calculus with Precalculus

Course Units: 1.0 Differential calculus of functions of a single variable, supplemented with supporting precalculus. Limits, continuity, differentiation, and applications. **CC:** QMR **ISP:** ENS **Note:** Not intended for students with credits for MTH 059 ,MTH 110 , MTH 113 , MTH 110P or MTH 113P.

MTH 110 - Calculus 1: Differential Calculus

Course Units: 1.0 Differential calculus of functions of a single variable. Limits, continuity, differentiation, computational aspects of Maclaurin and Taylor polynomials and series, and applications. **Note:** Not intended for students who have passed MTH 059 ,MTH 105 , MTH 113 , MTH 110P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

ECO 243 - Introduction to Econometrics

Course Units: 1.0 Descriptive statistics, probability, random variables and their distributions, sampling, statistical inference including confidence interval estimation, hypothesis testing, and regression analysis. Introduction to economic research using statistical methods to test theories. **Prerequisite(s):** ECO 101 **Prereq/Corequisite(s):** A minimum grade of C in ECO-243 is required to register for ECO 498 **CC:** SOCS **ISP:** ENS

ENS 215 - Exploring Environmental Data

Course Units: 1.0 Understanding how the Earth and environment works requires the careful analysis and interpretation of scientific data. Increasingly, the limitations to our understanding lie not in the availability of data, but rather in our ability to analyze and find meaning in it. Deriving insight from environmental data, in particular large and complex datasets, requires new tools, methods, and ways of thinking. In this class we are going to learn how to code in the programming language R and use it to analyze environmental data in order to better understand the Earth's systems. This course will feature a hands-on classroom with programming and data analysis occurring interactively during the class. Students will learn how to analyze and visualize large datasets and how to write code, while also covering interesting components of environmental and Earth sciences. **Prerequisite(s):** Any SET or SCLB. **CC:** SCLB, QMR, GDQR **Lecture/Lab Hours** Weekly lab required. **ISP:** ENS

PSY 200 - Statistical Methods in Psychology

Course Units: 1.0 The descriptive and inferential statistical procedures used by researchers to explain and analyze their results. Mean, variance, correlation, hypothesis testing using t-test, ANOVA, and nonparametric tests. **Prerequisite(s):** PSY 100 , PSY 210 / BIO 210 or (BIO 103 and BIO 104) **ISP:** ENS

SOC 300 - Quantitative Methods of Social Research

Course Units: 1.0 Identifying sociopolitical questions and developing hypotheses; designing research instruments (questionnaires); basic statistics and introduction to social science computer analysis. **Prereq/Corequisite(s):** SOC 100 **CC:** SOCS, JDQR, JSPE **ISP:** ENS

STA 164 - Strategies of Experimentation: Statistical Design and Analysis of Experiments

Course Units: 1.0 Experimentation is at the heart of the scientific method, both in the physical and social sciences. Not only do experiments validate or disprove existing hypotheses, but often unexpected results lead to the development of new hypotheses and new theoretical understanding. This course will focus on strategies to accelerate the scientific method when experimenting with multiple variables. Specific topics include design options, such as simple comparative experiments, factorials and fractional factorials, and response surface designs, as well as analysis methods such as graphical methods, analysis of variance, and regression models. **Prerequisite(s):** One of STA 104 ,STA 128 /MTH 128 , STA 264 , STA228/MTH 228 , MER 301, ECO 243, PSY 200 or permission from the Chair. **CC:** QMR **ISP:** ENS

STA 264 - Regression Analysis

Course Units: 1.0 Regression analysis is one of the most important and influential methods in statistics, finding application in virtually all disciplines, from business to healthcare to sociology to the hard sciences. This course will cover both the science of regression analysis - its underlying mathematical theory, as well as the art of its practical application. The course project will involve development of a regression model to fit a real data set. Lectures will be given primarily in matrix notation, i.e., using linear algebra. While the course will not be all-encompassing in itself due to time constraints, it would be good preparation for more advanced modeling courses involving data mining, machine

learning, "Big Data", and so on. Prior understanding of statistical concepts is assumed **Prerequisite(s):** MTH 115 and one of STA 104 , ECO 243, STA 164 , PSY 200, MER 301 or permission from the Chair. **ISP:** ENS

B. Two environmental policy/humanities courses

AAH 260 - Nature, Art, and the Environment

Course Units: 1.0 This course studies attitudes toward nature in Western Europe and North America from the Middle Ages through the 20th century. We will be examining cultural and artistic ideas related to the natural world, noting both continuity and change. In keeping with the interdisciplinary nature of the course, we will be examining such diverse sources as religion, literature and the printed book, gardens and landscape art, painting and printmaking, the history of botany, botanical art and scientific illustration, exploration and travel, climate and geography, agriculture and industrialization, and the development of "ecology". **CC:** HUM **ISP:** ENS

AAH 265 - Environmentalism and Globalization in Contemporary Art

Course Units: 1.0 This course examines artistic practices that meld science, aesthetics, and politics in imaginative and critical ways as they address environmentalism and globalization. The course primarily focuses on 21st century artists whose work takes on such subjects as pollution, biodiversity, sustainability and climate change. We will consider the blurring of the boundaries between art and activism and the many art genres and strategies used to address these issues from photography and sculpture to community collaborations and public art. **CC:** HUM, GCAD, GCHF, GSPE **ISP:** AMS, ENS, STS

ANT 241 - Environmental Anthropology

Course Units: 1.0 This course examines anthropological approaches to the environment and environmentalism. It asks questions such as: How does culture shape our perception of nature? What can conflicts over environmental protection, natural resources and human manipulations of natural materials tell us about contemporary societies? What does it mean to call an issue "political" or "cultural," versus "scientific" or "technical"? Students will develop the critical analysis skills to examine the natural world as a site of cultural politics, using anthropological concepts to examine environmentalism in diverse geographical and historical settings, including the Amazon, the Niger Delta, the suburban mall, and the Union campus. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** ENS, STS

AVA 345 - The Illustrated Organism

Course Units: 1.0 This studio course is the cross-section of common themes found in fine arts and biology, using art as a way of exploring science. The biological question of how evolution influences the relationship between structure and function will be addressed by exploring the use of color, light and structural logic with the goal of creating a world of your own. The course will culminate in an exhibition of artwork with corresponding texts by the student artists describing the connection between the art and science. Taught jointly by biology and visual arts. Apply through participating departments. **Cross-Listed:** BIO 345 **CC:** HUM, SCLB **ISP:** ENS

CLS 153 - The Environment in the Ancient World

Course Units: 1.0 Students will discover how ancient Mediterranean societies interacted with the natural world, as revealed by history, art and literature, and archaeology. Some of the questions we will investigate include: how did the Mediterranean environment affect and determine everyday life, both in cities and in rural areas? How did ancient societies manage their food supply? What was their view of nature? How did they react to ecological crisis? And, finally, how can we use their outlook on and treatment of the environment to inform our own approach? **CC:** HUM, LCC, GCHF **ISP:** ENS, STS

CLS 191 - Ancient Engineering

Course Units: 1 How did people living in the ancient Mediterranean region physically transform the world around them, and what do those transformations tell us about their values and beliefs? We'll examine major engineering successes (and failures) such as temples, aqueducts, catapults, and more, using multiple forms of evidence, from archaeology, visual imagery, and inscriptions, to re-enactment and 3D modeling. **CC:** HUM, GETS **ISP:** ENS

ECO 228 - Environmental and Natural Resource Economics

Course Units: 1.0 Economic causes of environmental degradation and natural resource depletion; benefit-cost analyses of public policies for environmental protection and natural resource preservation; specific issues in energy and wilderness resource management, air and water pollution abatement, and solid waste management. **Prerequisite(s):** ECO 101 or permission of instructor. **CC:** SOCS **ISP:** STS, ENS

EGL 280 - Nature and Environmental Writing

Course Units: 1.0 This course will focus on the traditions of nature and environmental writing in the American context, with an emphasis on the social and cultural dynamics of the environment and environmental action. Among other questions, we will ask ourselves: How do class, gender, and race enter into the nexus of social interactions that shape our environment? What is the place of literature in community, literacy, and environmental activism? What are the connections between the ways we speak and write about the environment and our actions toward the environment? How does the wilderness concept affect the ways citizens have access to public spaces? We will consider the concept of "nature" as we move through the course, culminating (if you like) with some nature writing of your own. Readings may include Thoreau; Carson; Leopold; Kingsolver, and selections from *Reading the Roots: American Nature Writing Before Walden*; *Colors of Nature*; Lauret Savoy, T*race: Memory, History, and the American Landscape*; and F. Marina Schauffler, *Turning to Earth: Stories of Ecological Conversion.* **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, ENS, STS

EGL 281 - Environmental Psychology and the American Literary Landscape

Course Units: 1.0 Environmental research psychologist Maria Vittoria Giuliani emphasizes that human-to-place attachments "not only permeate our daily life but very often appear also in the representations, idealizations and expressions of life and affect represented [in] literature." Indeed, many literary works emphasize humanity's basic attachment needs and the importance person-to-place bonds have in the development of the human psyche. American fiction writers frequently employ descriptions of American landscapes as inspiration for character and plot development, and American nature writers often emphasize the way in which wilderness environments may influence one's mental and physical health and emotional well-being. In fact, recent studies in the field of cognitive neuroscience provide empirical evidence to substantiate the theory that exposure to a natural environment may actually generate structural changes in the brain by increasing oxygenation and blood flow that occur in response to neural activity. Hence, this course will employ contemporary studies in place attachment, environmental psychology, and cognitive neuroscience to examine the way in which various literary works illustrate the important role environment plays in aiding or obstructing one's ability to think, reason, remember, problem-solve, process information, use language, or be creative. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, ENS

ENS 222 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction,

students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** MLT 209 **CC:** LCC, SET, HUM, HUL, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

ENS 242 - Comparative Climate Change Politics

Course Units: 1 This past year we have seen historic temperature records and heatwaves across the globe, the impacts of wildfires around the country and locally, and periods of drought and
extreme storms in different areas. These have been attributed to or amplified by anthropogenic climate change, which is one of the biggest challenges facing society in
the 21 st century. This course examines why climate change is such a "wicked problem", and why it is so difficult to address effectively. The barriers to addressing climate change are not just technical and scientific, but also political and social. Thinking about a future where we as a society mitigate the worst impacts of climate change this century, and adapt to other impacts entails navigating different political systems around the world and balancing various geopolitical and economic interests. Through this course, we will examine how these factors shape or constrain efforts to address climate change in Western Europe, the United States, China, India, and other parts of the world. We will also examine how climate change is impacting human life and security in these countries and other parts of the world, and how it may amplify existing inequalities and other crises. **ISP:** ENS

ENS 263 - U.S. Environmental Policy

Course Units: 1 This course examines the emergence, development, and future directions of environmental policy within the United States. It covers early environmental policy achievements such as the Clean Air Act, the reasons for federal inaction on environmental policy since the 1990s, and new directions for policy action in the 21st century as society understands how to mitigate and adapt to climate change. **CC:** LCC, SOCS **ISP:** AFR, AMS, ENS

ENS 264 - Climate Communication

Course Units: 1 **Cross-Listed:** PSC 264

ENS 302 - U.S. Energy Policy

Course Units: 1 Transitions to zero-carbon sources of energy are a critical part of addressing climate change globally. Within various parts of the United States, this transition has been slow and involved a number of political conflicts. Fossil fuel corporations, energy interest groups, and several other actors have fought over the direction of energy policy, with these battles largely occurring at the state and local levels. This class explores these relationships and conflicts to understand the battles over a clean energy transition in the United States and the implications for addressing climate change. **Cross-Listed:** PSC 302 **CC:** SOCS **ISP:** ENS, STS

ENS 291 - Construction for Humanity

Course Units: 1.0 An interdisciplinary introduction to the technology of construction and the social uses of building by humans. The course will consider types of building materials and their application to domestic housing, castles, cathedrals, palaces, monuments, dams, bridges, tunnels, factories, and office buildings. **Cross-Listed:** HST 291 **CC:** SET, GETS **ISP:** ENS, STS

HST 138 - Big History

Course Units: 1.0 An exploration of the past from the big bang to the present, dividing the history of the universe, earth, life, and humanity into periods using very large scales of time. **CC:** SOCS, GCHF **ISP:** ENS, STS

HST 109 - History of Sustainability

Course Units: 1.0 Sustainability. You now find the word just about everywhere. For more than a few people it has become the defining mission of their generation, an existential challenge that must be met for the survival of humanity. This is a course in thematic global history that explores the concept of sustainability from an historical perspective. Sustainability is not a new thing in human history or just a consequence of our environmentally-challenged present. Sustainability is part of our cultural inheritance with deep roots in the histories of Asia, the Americas, Europe, and Africa. Also, sustainability is not simply synonymous with environmentalism or climate change. It has always encompassed social realities like power, trade and commerce, cultural identities, human relationships to science and technology, and much more. Sustainability is a history of the societies we create and the values that define them, for good or ill. Ultimately, the history of sustainability is an opportunity to reflect on the nature of our humanity and the ideals that empower a just future. We will explore sustainability's history through primary texts, analyses of the concept across time and space, the study of sustainability challenges - successes and failures - in past societies, and contemporary realties faced by peoples across the globe, whether in the megacities of China and Latin America or the urban gardens of Detroit and the green housing cooperatives of Berlin. **CC:** LCC, SOCS, GCHF **ISP:** ENS

HST 206 - Environmental Histories of Empire

Course Units: 1.0 This course will explore histories of empire in comparative perspective. It provides students with an introduction to global environmental history by focusing on the changing relationships between people and their natural environments. It takes a transnational approach, exploring various case studies drawn from different imperial settings and temporalities. We will look at the development of early states, the growth of the capitalist world economy in the Atlantic, successive periods of empire-building in Africa and Asia, new forms of resource extraction and changing commodity flows, and environmental politics, while placing the natural world at the center of our analysis. In this course, we will use a more expansive definition of imperialism to include not only formal territorial empires, but also informal economic ones and various post-colonial forms of domination. Other themes to be explored will be: changing perceptions of the natural world, industrialization, warfare, urbanization, technological transformations, and changes in production and consumption. The goal is that students will develop of better understanding of the modern world and the ways in which humans have radically changed their natural environments. **CC:** LCC **ISP:** AFR, ENS

HST 225 - American Environmental History

Course Units: 1.0 This course aims to give students the knowledge and the tools to think critically about how history has shaped the present state of the earth and human relationships with it. It focuses on the history of man's interaction with nature on the North American continent, with a particular focus on the area that would become the United States, from precolonial times until the present. **CC:** SOCS **ISP:** AMS, ENS

HST 229 - The Adirondacks and American Environmental History

Course Units: 1.0 The Adirondack region of northern New York Slate has been a proving ground for shifting American attitudes toward the environment, from early colonial (ears of wilderness, to intensive resource exploitation, and to efforts to conserve natural resources and preserve distinctive wilderness areas. This course will examine Adirondack environmental history and place it in the context of broader American environmental history. It will leverage Union College's proximity to the region, and the resources of the Union College Kelly Adirondack Center, to offer students both intellectual and experiential engagement with the history of this distinctive place. **CC:** SOCS **ISP:** AMS, ENS, STS

HST 299 - The Nuclear Age

Course Units: 1.0 The nuclear age began with the discovery of radioactivity on the eve of the twentieth century and continues on to the present. The technology people have created to study and exploit the energy and particles released

by nuclei, including nuclear weapons and nuclear power, but also many other applications in industry and medicine, have defined this age. This course will survey these economic, political, social, and cultural problems facing mankind: the proliferation of nuclear weapons, and human-induced climate change. **CC:** SOCS, GCHF, GETS, WAC **ISP:** ENS, STS

MLT 209 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** ENS 222 **CC:** LCC, SET, HUL, HUM, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

PHL 273 - Environmental Ethics

Course Units: 1.0 An exploration of the ethical and philosophical ideas that have shaped attitudes toward the environment and toward non-human species. **CC:** HUM **ISP:** ENS, STS

PSC 260 - Policy Making and American Society

Course Units: 1.0 The process through which public policies are originated, shaped, adopted, and applied at all levels of government in the U.S. and the impact of public policies on American society. Policies such as crime, immigration, gay rights, abortion, the environment, smoking, and others are used as case studies to examine the policy process. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS

PSC 302 - U.S. Energy Policy

Course Units: 1

Considers the protections afforded to individual rights and liberties by the U.S. Constitution and the Bill of Rights. Topics include freedom of speech and assembly, the right to privacy, religious freedom, equal protection and discrimination, and the due process rights of those accused of crimes. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **Cross-Listed:** ENS 302 **Prerequisite(s):** PSC 111 or PSC 112
CC: SOCS, JCHF, JSPE **ISP:** AMS, ENS, STS

PSC 357 - Global Environmental Politics

Course Units: 1 This is a course on global environmental governance. Environmental regulation has expanded from a domestic phenomenon to one that has both global participants and global impacts. Much effort has been invested in formulating international environmental policies. However, these efforts have been rife with complications and disagreements, as many environmental indicators show worsening ecological conditions at unprecedented levels. The scientific uncertainty that shrouds many environmental questions is compounded by the fact that environmental issues often lie at the conjunction of contentious political concerns such as economic development, international trade, ecological justice, and global influence. This course provides an overview of the key concepts, actors, concerns, and issues related to global environmental policy and negotiations. The goal is to understand the larger picture of intertwining relationships between natural, political, economic, and social systems that shape environmental policy. **ISP:** ENS

PSC 272 - The Environment, Energy, and US Politics

Course Units: 1.0 Examination of how politics and policymaking affect the air we breathe, the water we drink, and the land we live on. This course will explore key U.S. environmental issues and their scientific underpinnings as well as the connections between these issues and our collective use of natural resources. The course will review major pieces of federal environmental law in the United States and address the policy considerations, justifications, and regulatory frameworks underlying them, as well as the effectiveness of these laws in achieving a healthier environment. The course will also examine the respective roles of Congress, the executive agencies, and the courts in determining environmental policy. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, STS

- REE 300T - History and Environment of Siberia

SOC 202 - Social Problems, Policy and Pop Culture

Course Units: 1.0 Identification of social forces and cultural images of major social problems (i.e. substance abuse, violence, crime, pollution) and relevant social policies. **Prerequisite(s):** SOC 100 **CC:** SOCS, JCHF, JSPE **ISP:** ENS

SOC 260 - Population and Society: Demographic Trends

Course Units: 1.0 An introduction to the study of human populations and the dynamics of birth, death and migration. Focus on how populations grow and decline and the implications for social policy in areas such as health, aging, social inequality, the environment, immigration and urban life. **Prerequisite(s):** SOC 100 **ISP:** ENS

SOC 270 - Social Movements, the Environment, and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** PSC 283 **Prerequisite(s):** SOC 100 **ISP:** AMS, ENS, STS

SOC 271 - Sociology of Disaster

Course Units: 1.0 This course is an introduction to the sociological analysis of disasters. We will consider how sociologists conceptualize and theorize about disasters and the social and physical damage, death and injury, and economics loss they involve. Variations in the vulnerability of communities and particular social groups to such events will also be examined. **Prerequisite(s):** SOC 100 **ISP:** ENS

SOC 359 - Environmental Policy and Resource Management

Course Units: 1.0 An examination of environmental issues and problems such as acid rain, ocean dumping, and nuclear wastes, and the social forces that shape environmental policies. Students complete an internship with an environmental service theme. **CC:** SOCS **ISP:** ENS, STS

SOC 450 - Environmental Services and Policy

Course Units: 1.0 The focus of this seminar is on the implementation of different environmental policies. Internships or case studies of environmental organizations, including NYS Department of Environmental Conservation, are part of the course. **Prerequisite(s):** SOC 100 **CC:** SOCS, WAC, WAC-R, WS **ISP:** ENS

C. Six upper level science courses and area of concentration

(No more than four courses from any one department except for Environmental Engineering and Technology students; no double counting from A-B, above. The following are suggested areas of concentration; alterations must be approved in writing by the ESPE Director):

Ecology

- BIO 257T - Tropical Rainforest Ecology

BIO 314 - Ornithology w/lab

Course Units: 1.0 Birds are excellent subjects to study all levels of biological organization, from biochemistry and genetics through physiology, ecology, and evolution. This course emphasizes the evolution, anatomy, physiology, ecology, and conservation biology of avifauna. Weekly labs will be split between the field to identify birds through sight and sound and the laboratory to learn dissections and study skins. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 314L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 315 - Biology of Plants w/lab

Course Units: 1.0 Students will learn about the major characteristics and innovations of land plants and evaluate the functional and adaptive significance of variants in their form, physiology and life history. **Prerequisite(s):** BIO 103 and BIO 104 or permission of the instructor. **Corequisite(s):** BIO 315L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 319 - Vertebrate Natural History w/lab

Course Units: 1.0 This course explores the biology of vertebrate animals with emphasis on understanding the diversity, life history, taxonomy, and unique adaptations of local vertebrate species (exclusive of fish). The laboratory focuses on developing scientifically sound skills in observation and identification of amphibians, reptiles, mammals, and birds. There will be frequent field trips to observe vertebrates in their natural habitats. Additional meetings will be required for regional field excursions, and for morning bird watching. Students must be available for one evening and one morning field trip. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 319L **CC:** SCLB **ISP:** ENS

BIO 320 - Ecology w/lab

Course Units: 1.0 Organisms and their environment, population and community ecology, and the structure and integration of ecosystems will be discussed along with a focus on animal community ecology. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 320L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS **Note:** There may be field trips requiring scheduling outside of normal class time.

BIO 322 - Conservation Biology w/lab

Course Units: 1.0 Natural ecosystems have suffered from declining biodiversity and encroaching human development. In this course, you will examine how these alterations impact populations and ecosystems and will evaluate management strategies designed to facilitate long-term sustainability. Topics include genetics and population biology of rare species, threats to biodiversity and adaptive ecosystems management. **Prerequisite(s):** BIO 103 and BIO 104 or permission of instructor. **Corequisite(s):** BIO 322L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 324 - Plant Ecology w/lab

Course Units: 1.0 Examines the factors that affect the distribution and abundance of plants including the availability of water or nutrients, interactions with neighboring plants or animals, and the frequency of disturbances such as fires. Topics also include such environmental issues as climate change, exotic species invasions, the conservation of rare species, and the benefits of urban nature for human health. The weekly lab includes field excursions and quantitative data analysis. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 324L **CC:** SCLB, WAC-R, GDQR, GNPS **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 325 - Animal Behavior w/lab

Course Units: 1.0 An introduction to the study of animal behavior. The mechanisms and evolutionary processes underlying animal behavior under natural conditions will be examined. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 325L **CC:** SET **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 350 - Evolutionary Biology w/lab

Course Units: 1.0 Major concepts and mechanisms of biological evolution, including history of life, population genetics, molecular evolution, Darwinian medicine, and an emphasis on the processes of speciation. **Prerequisite(s):** BIO 103 and BIO 104 or permission of the instructor. **Corequisite(s):** BIO-350L **CC:** SET **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 350T - Terrestrial Ecology of Australia

Course Units: **CC:** SET **ISP:** ENS

BIO 352T - Marine Ecology of Australia

Course Units: 1 **CC:** SET **ISP:** ENS

ENS 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on earth and is a vital source of water for household, industrial, and agricultural uses worldwide. The well-being and prosperity of human civilization requires the sound stewardship and sustainable use of our groundwater supplies. In addition to serving as an essential resource for humanity, groundwater plays a central role in many environmental and geologic processes, including the maintenance of river flows between rainfall events, the occurrence of earthquakes, and the genesis of certain types of ore deposits and landforms. Groundwater is also a key consideration in many engineering operations such as the construction of dams and tunnels and the assessment of landslide and land subsidence risk. Groundwater hydrology is a highly interdisciplinary field that brings together the geologic and environmental sciences with engineering. This course will begin by exploring the physical properties of groundwater and the geologic media through which it flows, the physical laws that govern groundwater flow and transport, and techniques for modeling groundwater flow patterns. The mid-part of the course will focus on the engineering aspects of groundwater, covering topics such as the hydraulics of pumping wells, the transport of contaminants within aquifers, the remediation of contaminated aquifers, and well-drilling technology. Later we will cover the role groundwater plays in geologic processes and the role of geology in determining groundwater chemistry and quality. We will also discuss the connections between groundwater and human health and the importance of groundwater in the global food supply. Students will leave this course with the fundamental knowledge needed to begin answering scientific and engineering questions in the fascinating world of groundwater hydrology. **Cross-Listed:** GEO 210 **Prerequisite(s):** ENS 100 or any GEO course numbered 110 or higher. **CC:** GDQR, GETS, GNPS **Lecture/Lab Hours** One lab per week. **ISP:** ENS

ENS 215 - Exploring Environmental Data

Course Units: 1.0 Understanding how the Earth and environment works requires the careful analysis and interpretation of scientific data. Increasingly, the limitations to our understanding lie not in the availability of data, but rather in our ability to analyze and find meaning in it. Deriving insight from environmental data, in particular large and complex datasets, requires new tools, methods, and ways of thinking. In this class we are going to learn how to code in the programming language R and use it to analyze environmental data in order to better understand the Earth's systems. This course will feature a hands-on classroom with programming and data analysis occurring interactively during the class. Students will learn how to analyze and visualize large datasets and how to write code, while also covering interesting components of environmental and Earth sciences. **Prerequisite(s):** Any SET or SCLB. **CC:** SCLB, QMR, GDQR **Lecture/Lab Hours** Weekly lab required. **ISP:** ENS

GEO 202 - Geomorphology

Course Units: 1.0 Processes operating on and near the Earth's surface are responsible for the development of landforms, and the evolution of these landforms through time. This course covers erosional and depositional processes of glaciers, rivers, hillslopes, and wind, and the geochemical reactions responsible for the formation of soils and caves. These topics are covered within the context of the geologic evolution of the Mohawk Valley since the end of the last Ice Age. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 202L **CC:** WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS

GEO 203 - Lakes and Environmental Change

Course Units: 1.0 Modern limnology and the record of environmental change as recorded in the physical and chemical properties of lake water and lake sediments. Includes a term-long research project on two local lakes, and the interpretation of the proxy paleoenvironmental indicators contained in sediment cores from these lakes. **Prerequisite(s):** Any 100-level geosciences or biology course or ENS 100 **Corequisite(s):** GEO 203L **ISP:** ENS

GEO 207 - Stable Isotopes in Environmental Science

Course Units: 1.0 Stable isotopes have become a fundamental tool in many biogeoscientific studies, from reconstructing past climates to tracking animal migration or unraveling foodwebs and even to study the origin of life on Earth and possibly other planets. This course highlights the applications of stable isotopes in biological, ecological, environmental, archeological, and geological studies. Students learn the fundamentals of stable isotope biogeochemistry in order to understand the uses and limitations of this tool. This course starts with an introduction to the fundamentals of stable isotope geochemistry and then moves on to applied topics such as paleoceanography and paleoclimatology proxies, hydrology, sediments and sedimentary rocks, biogeochemical cycling, the global carbon cycle, photosynthesis, metabolism, ecology, organic matter degradation, pollution, and more. **Prerequisite(s):** Any geosciences, biology, or chemistry course or ENS 100 , or permission of the instructor. **Corequisite(s):** GEO 207L **CC:** WAC, GDQR, GNPS **ISP:** ENS

GEO 208 - Paleontology, Paleobiology, and Paleoecology

Course Units: 1.0 Nearly all species that have existed on Earth are now extinct and are only known through the fossil record. This course examines the evolution and history of life on Earth as interpreted from the fossil record. Topics include fossil preservation, taphonomy, ontogeny, diversity trajectories through geologic time, evolutionary mechanisms, extinction, paleobiology, paleoecology, and paleoclimate. Special emphasis will be placed on using fossils to interpret ancient environments as well as deciphering past climates. The course focuses on the fossil record of marine invertebrates, but major groups of vertebrates (such as dinosaurs) and plants are also covered. **Cross-Listed:** BIO 208 **Prerequisite(s):** Any geosciences or biology course or ENS 100 **Corequisite(s):** GEO 208L **CC:** SCLB **ISP:** ENS

GEO 209 - Paleoclimatology

Course Units: 1.0 Climate is fundamentally relevant to modern and ancient societies. Global warming is occurring today, and whether it is driven by human activities (e.g., CO2, CH4 emissions) or by natural climate cycles can only be determined by understanding natural climatic variability. Fortunately, there are many tools, and natural climatic records that can provide us with information on past climate (e.g. tree rings, ice cores from glaciers, and sediment cores from lakes and oceans). Obtaining, documenting and interpreting these records is the field of paleoclimatology, and it is the focus of this course. Past climate variability is used to highlight possible scenarios of future climate change. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 209L **CC:** SCLB **ISP:** ENS

GEO 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on Earth and serves as a vital resource that supports the economies and ecosystems of the world - including providing much of the irrigation water that grows our food, supplying drinking water to over 2 billion people, and sustaining surface water bodies and groundwater dependent ecosystems. With the world's groundwater resources threatened by intensive groundwater pumping, environmental and climate change, and the release of contaminants into the environment, there is a pressing need to better understand and manage this resource. Groundwater hydrology is a highly interdisciplinary field that brings together the geologic and environmental sciences with engineering. This course will begin by exploring the environmental and geologic factors that influence the occurrence and movement of groundwater. We will then delve into the physical laws the govern groundwater flow and learn how to model these flows. Later in the course we will cover the role of groundwater in a range of geologic and ecological processes. We will also cover engineering applications of groundwater such as the hydraulics of pumping wells, land subsidence, and the movement of contaminants within aquifers. Students will leave this course with the fundamental knowledge needed to begin answering the scientific and engineering challenges related to our groundwater resources. **Cross-Listed:** ENS 210 **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 210L **CC:** GDQR, GETS, GNPS **ISP:** ENS

GEO 300 - Glacial and Quaternary Geology

Course Units: 1.0 The transformation of snow to ice, the mass balance of glaciers, types of glaciers, and the processes that control glacier sliding, erosion, and deposition. Includes techniques commonly employed to date Quaternary deposits and an examination of the geologic record of the Ice Ages as recorded in glaciers, glacial deposits, and marine and lake sediments of the Quaternary period. Weekly labs document the geologic record of the last glaciation in exposures in the southern Adirondacks, central Hudson Valley, eastern Mohawk Valley, and northern Schoharie Valley. **Prerequisite(s):** Any 200-level geosciences course, or permission of the instructor. **Corequisite(s):** GEO 300L **ISP:** ENS

GEO 305 - Global Biogeochemical Cycles

Course Units: 1.0 Biology, geology and chemistry are intricately linked to form the world around us. Biogeochemical cycles set the stage for life on Earth. This course explores the carbon, nitrogen, water, phosphorus, and sulfur cycles in the critical zone and oceans. The critical zone is the terrestrial layer that extends from the bedrock to the top of vegetation, and this course continues into estuaries and the open ocean. We investigate how biological (e.g., primary production, respiration), anthropogenic (e.g., urbanization, pollution) and geological processes (e.g., tectonics, rock weathering) influence the critical zone and oceans, and in turn how these cycles influence life and climate. Field studies focus on tropical marine biogeochemistry of coral reefs, mangrove forests, seagrass meadows, lagoons and estuaries. Course includes a required week-long field trip to a remote field station in Panama. There are additional costs associated with field trip expenses, but students can apply for travel assistance. All students must meet basic term abroad requirements and submit an application. This course is open to all students, but preference will be given to those with a declared major in geosciences, environmental science, chemistry, or biology. **Cross-Listed:** BIO 235 **Corequisite(s):** GEO 305L **Prereq/Corequisite(s):** Take a course from either BIO, CHM, GEO or ENS 100 . **CC:** WAC, WAC-R **ISP:** ENS

GEO 355T - Living on the Edge

Course Units: 1.0 This course is a mini-term abroad. The field study of earthquakes, volcanoes, glaciers, and other hazards where tectonic plates collide and mountains form. Field studies focus on understanding the science behind geologic hazards that lead to catastrophic events and subsequent loss of life. Fieldwork is aimed at recognizing hazards, understanding the processes behind the hazards, and to see the role that society plays in mitigating these hazards. The study area alternates around the Pacific Rim between locations that include Peru (June), Alaska (June), and New Zealand (December). Fieldwork is preceded by organizational sessions on campus to prepare for field projects. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **ISP:** ENS

Environmental Geosciences

BIO 235 - Global Biogeochemical Cycles

Course Units: 1.0 Biology, geology and chemistry are intricately linked to form the world around us. Biogeochemical cycles set the stage for life on Earth. This course explores the carbon, nitrogen, water, phosphorus, and sulfur cycles at the surface of the Earth. We investigate how biological (e.g., primary production, respiration), anthropogenic (e.g., urbanization, pollution) and geological processes (e.g., tectonics, rock weathering) influence these chemical cycles and in turn how these cycles influence the climate and the oceans. Field studies focus on tropical marine biogeochemistry of coral reefs, mangrove forests, seagrass meadows, lagoons and estuaries. Course includes a required week-long field trip to a remote field station in Panama. There are additional costs associated with field trip expenses. All students must meet basic term abroad requirements and submit an application. This course is open to all students, but preference will be given to those with a declared major in geosciences, environmental science, chemistry or biology. **Cross-Listed:** GEO 305 **Corequisite(s):** BIO 305L **CC:** SCLB, WAC, WAC-R **ISP:** ENS

BIO 315 - Biology of Plants w/lab

Course Units: 1.0 Students will learn about the major characteristics and innovations of land plants and evaluate the functional and adaptive significance of variants in their form, physiology and life history. **Prerequisite(s):** BIO 103 and BIO 104 or permission of the instructor. **Corequisite(s):** BIO 315L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 320 - Ecology w/lab

Course Units: 1.0 Organisms and their environment, population and community ecology, and the structure and integration of ecosystems will be discussed along with a focus on animal community ecology. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 320L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS **Note:** There may be field trips requiring scheduling outside of normal class time.

BIO 324 - Plant Ecology w/lab

Course Units: 1.0 Examines the factors that affect the distribution and abundance of plants including the availability of water or nutrients, interactions with neighboring plants or animals, and the frequency of disturbances such as fires. Topics also include such environmental issues as climate change, exotic species invasions, the conservation of rare species, and the benefits of urban nature for human health. The weekly lab includes field excursions and quantitative data analysis. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 324L **CC:** SCLB, WAC-R, GDQR, GNPS **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 350T - Terrestrial Ecology of Australia

Course Units: **CC:** SET **ISP:** ENS

BIO 352T - Marine Ecology of Australia

Course Units: 1 **CC:** SET **ISP:** ENS

CHM 231 - Organic Chemistry 1

Course Units: 1.0 A mechanistic approach to the chemistry of carbon compounds organized around the reactions of functional groups. We cover alkanes, cycloalkanes, alcohols, alkyl halides (nucleophilic substitution and elimination), alkenes (addition and elimination), alkynes, spectroscopy (IR and NMR) and computer molecular modeling. **Prerequisite(s):** CHM 102 or CHM 110H **Corequisite(s):** CHM 231L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

CHM 240 - Analytical Chemistry

Course Units: 1.0 A course that focuses on the quantitative analysis of samples. Classroom and laboratory emphasis on statistical treatment of data, classical and instrumental methods of chemical analysis, and chemical equilibrium. **Prerequisite(s):** CHM 231 **Corequisite(s):** CHM 240L **CC:** SCLB, WAC-R **Lecture/Lab Hours** Six lab hours each week. **ISP:** ENS

CHM 245 - Environmental Chemistry

Course Units: 1.0 A course focused on the role of chemical principles such as chemical equilibrium, kinetics and chemical structure in understanding natural environmental cycles and the impacts of human activity on those cycles. Topics covered include: aquatic chemistry and water pollution, atmospheric chemistry and air pollution, energy and climate change, and toxic organic chemicals in the environment. **Prerequisite(s):** CHM 231 **CC:** SET **ISP:** ENS

CHM 340 - Chemical Instrumentation

Course Units: 1.0 Theory and practice of modern methods of analysis with emphasis on spectroscopic, chromatographic, electrochemical, and surface science techniques, as well as electronic measurements. **Prerequisite(s):** CHM 231 , CHM 240 , and one course in physics or permission of the instructor. **Corequisite(s):** CHM 340L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

ENS 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on earth and is a vital source of water for household, industrial, and agricultural uses worldwide. The well-being and prosperity of human civilization requires the sound stewardship and sustainable use of our groundwater supplies. In addition to serving as an essential resource for humanity, groundwater plays a central role in many environmental and geologic processes, including the maintenance of river flows between rainfall events, the occurrence of earthquakes, and the genesis of certain types of ore deposits and landforms. Groundwater is also a key consideration in many engineering operations such as the construction of dams and tunnels and the assessment of landslide and land subsidence risk. Groundwater hydrology is a highly interdisciplinary field that brings together the geologic and environmental sciences with engineering. This course will begin by exploring the physical properties of groundwater and the geologic media through which it flows, the physical laws that govern groundwater flow and transport, and techniques for modeling groundwater flow patterns. The mid-part of the course will focus on the engineering aspects of groundwater, covering topics such as the hydraulics of pumping wells, the transport of contaminants within aquifers, the remediation of contaminated aquifers, and well-drilling technology. Later we will cover the role groundwater plays in geologic processes and the role of geology in determining groundwater chemistry and quality. We will also discuss the connections between groundwater and human

health and the importance of groundwater in the global food supply. Students will leave this course with the fundamental knowledge needed to begin answering scientific and engineering questions in the fascinating world of groundwater hydrology. **Cross-Listed:** GEO 210 **Prerequisite(s):** ENS 100 or any GEO course numbered 110 or higher. **CC:** GDQR, GETS, GNPS **Lecture/Lab Hours** One lab per week. **ISP:** ENS

ENS 215 - Exploring Environmental Data

Course Units: 1.0 Understanding how the Earth and environment works requires the careful analysis and interpretation of scientific data. Increasingly, the limitations to our understanding lie not in the availability of data, but rather in our ability to analyze and find meaning in it. Deriving insight from environmental data, in particular large and complex datasets, requires new tools, methods, and ways of thinking. In this class we are going to learn how to code in the programming language R and use it to analyze environmental data in order to better understand the Earth's systems. This course will feature a hands-on classroom with programming and data analysis occurring interactively during the class. Students will learn how to analyze and visualize large datasets and how to write code, while also covering interesting components of environmental and Earth sciences. **Prerequisite(s):** Any SET or SCLB. **CC:** SCLB, QMR, GDQR **Lecture/Lab Hours** Weekly lab required. **ISP:** ENS

GEO 201 - Stratigraphy and Depositional Environments of New York

Course Units: 1.0 Tectonic events revealed through the stratigraphy and inferred depositional environments of the lower Paleozoic sedimentary rock sequences in eastern New York. Stratigraphic and sedimentologic concepts are explored through weekly field studies and comparison with modern depositional systems. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 201L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS

GEO 202 - Geomorphology

Course Units: 1.0 Processes operating on and near the Earth's surface are responsible for the development of landforms, and the evolution of these landforms through time. This course covers erosional and depositional processes of glaciers, rivers, hillslopes, and wind, and the geochemical reactions responsible for the formation of soils and caves. These topics are covered within the context of the geologic evolution of the Mohawk Valley since the end of the last Ice Age. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 202L **CC:** WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS

GEO 203 - Lakes and Environmental Change

Course Units: 1.0 Modern limnology and the record of environmental change as recorded in the physical and chemical properties of lake water and lake sediments. Includes a term-long research project on two local lakes, and the interpretation of the proxy paleoenvironmental indicators contained in sediment cores from these lakes. **Prerequisite(s):** Any 100-level geosciences or biology course or ENS 100 **Corequisite(s):** GEO 203L **ISP:** ENS

GEO 205 - Active Tectonics

Course Units: 1.0 This course explores the dynamics of active plate boundaries and plate motions as revealed in plate margin deformation, earthquakes, volcanic activity, and metamorphism. Includes an introduction to stress and strain, deformation mechanisms, faults and folds, geochronology, and petrology of distinct rocks in convergent settings. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **ISP:** ENS

GEO 206 - Volcanology

Course Units: 1.0 Volcanic eruptions showcase the beauty, complexity, and destructive forces of nature. This course tackles the questions of why volcanoes erupt (a fundamental question without universal agreement!), where they erupt, how they erupt, how we predict eruptions, and the effects of eruptions on societies. Case studies include famous eruptions such as Vesuvius, Yellowstone, Hawaii, and Mt. St. Helens, as well as some volcanoes being researched by Union faculty and students in the Caribbean, Pacific Northwest, and Mexico. Students learn the different ways that volcanoes are monitored (seismic, gas emissions, hydrothermal waters, deformation). The course highlights ongoing current volcanic activity and monitoring and students engage in multiple role-playing exercises using data to forecast eruptions and deal with a volcanic crisis. Students will become more proficient in science communication and how to convey information to the public through videos, infographics, and other forms of media. This course will include a spring break trip to Kilauea volcano in Hawaii. All students must meet basic term abroad requirements and submit an application. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 206L **ISP:** ENS

GEO 207 - Stable Isotopes in Environmental Science

Course Units: 1.0 Stable isotopes have become a fundamental tool in many biogeoscientific studies, from reconstructing past climates to tracking animal migration or unraveling foodwebs and even to study the origin of life on Earth and possibly other planets. This course highlights the applications of stable isotopes in biological, ecological, environmental, archeological, and geological studies. Students learn the fundamentals of stable isotope biogeochemistry in order to understand the uses and limitations of this tool. This course starts with an introduction to the fundamentals of stable isotope geochemistry and then moves on to applied topics such as paleoceanography and paleoclimatology proxies, hydrology, sediments and sedimentary rocks, biogeochemical cycling, the global carbon cycle, photosynthesis, metabolism, ecology, organic matter degradation, pollution, and more. **Prerequisite(s):** Any geosciences, biology, or chemistry course or ENS 100 , or permission of the instructor. **Corequisite(s):** GEO 207L **CC:** WAC, GDQR, GNPS **ISP:** ENS

GEO 208 - Paleontology, Paleobiology, and Paleoecology

Course Units: 1.0 Nearly all species that have existed on Earth are now extinct and are only known through the fossil record. This course examines the evolution and history of life on Earth as interpreted from the fossil record. Topics include fossil preservation, taphonomy, ontogeny, diversity trajectories through geologic time, evolutionary mechanisms, extinction, paleobiology, paleoecology, and paleoclimate. Special emphasis will be placed on using fossils to interpret ancient environments as well as deciphering past climates. The course focuses on the fossil record of marine invertebrates, but major groups of vertebrates (such as dinosaurs) and plants are also covered. **Cross-Listed:** BIO 208 **Prerequisite(s):** Any geosciences or biology course or ENS 100 **Corequisite(s):** GEO 208L **CC:** SCLB **ISP:** ENS

GEO 209 - Paleoclimatology

Course Units: 1.0 Climate is fundamentally relevant to modern and ancient societies. Global warming is occurring today, and whether it is driven by human activities (e.g., CO2, CH4 emissions) or by natural climate cycles can only be determined by understanding natural climatic variability. Fortunately, there are many tools, and natural climatic records that can provide us with information on past climate (e.g. tree rings, ice cores from glaciers, and sediment cores from lakes and oceans). Obtaining, documenting and interpreting these records is the field of paleoclimatology, and it is the focus of this course. Past climate variability is used to highlight possible scenarios of future climate change. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 209L **CC:** SCLB **ISP:** ENS

GEO 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on Earth and serves as a vital resource that supports the economies and ecosystems of the world - including providing much of the irrigation water that grows our food, supplying drinking water to over 2 billion people, and sustaining surface water bodies and groundwater dependent ecosystems. With the world's groundwater resources threatened by intensive groundwater pumping,

environmental and climate change, and the release of contaminants into the environment, there is a pressing need to better understand and manage this resource. Groundwater hydrology is a highly interdisciplinary field that brings together the geologic and environmental sciences with engineering. This course will begin by exploring the environmental and geologic factors that influence the occurrence and movement of groundwater. We will then delve into the physical laws the govern groundwater flow and learn how to model these flows. Later in the course we will cover the role of groundwater in a range of geologic and ecological processes. We will also cover engineering applications of groundwater such as the hydraulics of pumping wells, land subsidence, and the movement of contaminants within aquifers. Students will leave this course with the fundamental knowledge needed to begin answering the scientific and engineering challenges related to our groundwater resources. **Cross-Listed:** ENS 210 **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 210L **CC:** GDQR, GETS, GNPS **ISP:** ENS

GEO 220 - Mineral Science

Course Units: 1.0 Mineral science is foundational for other geology and environmental science courses, as well as many other scientific disciplines that encounter crystalline solids. This class provides students with a solid understanding of minerals, which are the building blocks of all rocks on this and every other planet, and provide most of our industrial resources, many building materials and precious gems. A successful student leaving this class will be able to identify most common minerals when they occur "in the wild" and be familiar with their internal structure and crystal chemistry. The practical use of state-of-the- art analytical techniques common to the study of solid materials is emphasized to elucidate the links between internal crystalline structure and macroscopic physical properties. Students will use the scanning electron microscope, the x-ray diffractometer and the polarizing light microscope. In addition to learning the fundamentals of mineral science, students will gain appreciation for the beauty and symmetry present in the natural world. **Prerequisite(s):** CHM 101 or equivalent and any 100-level geosciences course. **Corequisite(s):** GEO 220L **ISP:** ENS

GEO 300 - Glacial and Quaternary Geology

Course Units: 1.0 The transformation of snow to ice, the mass balance of glaciers, types of glaciers, and the processes that control glacier sliding, erosion, and deposition. Includes techniques commonly employed to date Quaternary deposits and an examination of the geologic record of the Ice Ages as recorded in glaciers, glacial deposits, and marine and lake sediments of the Quaternary period. Weekly labs document the geologic record of the last glaciation in exposures in the southern Adirondacks, central Hudson Valley, eastern Mohawk Valley, and northern Schoharie Valley. **Prerequisite(s):** Any 200-level geosciences course, or permission of the instructor. **Corequisite(s):** GEO 300L **ISP:** ENS

GEO 302 - Geochemical Systems and Modeling

Course Units: 1.0 Investigation of the Earth as a chemical system and using chemical tools to understand geologic processes. Topics include origin of the elements, formation and differentiation of the Earth, igneous processes, radioactive isotopes and radiometric dating, and geochemistry of near-surface waters and the oceans. Work includes theory, sample collection, sample preparation, chemical analysis using in-house equipment, and computer modeling of the using the acquired data. Includes readings and discussions of the contemporary geochemical literature. **Prerequisite(s):** CHM 101 or equivalent **Corequisite(s):** GEO 302L **ISP:** ENS

GEO 303 - Earthquakes and the study of the Earth's Interior

Course Units: 1.0 In this course students will learn about the various geophysical methods used to probe the Earth's interior. With a heavy focus on earthquakes and seismology, the course explores the question of how we learn about the Earth beneath our feet. Through the hands-on use of modern geophysical field equipment we will explore the deep and shallow structure of the whole earth. We will learn about finding geological resources and about the physical explanations for plate tectonics. We will also examine how radioactivity and heat flow within the earth can tell us about

our warming climate. A common thread throughout the course is computer modeling, data acquisition, signal processing and associated uncertainties. By the end of the course, students will have a familiarity with the differences between the many geophysical surveying methods and the different cases in which they could be employed. **Prerequisite(s):** Any 100-level geosciences or physics course or ENS 100 **Corequisite(s):** GEO 303L **ISP:** ENS

GEO 305 - Global Biogeochemical Cycles

Course Units: 1.0 Biology, geology and chemistry are intricately linked to form the world around us. Biogeochemical cycles set the stage for life on Earth. This course explores the carbon, nitrogen, water, phosphorus, and sulfur cycles in the critical zone and oceans. The critical zone is the terrestrial layer that extends from the bedrock to the top of vegetation, and this course continues into estuaries and the open ocean. We investigate how biological (e.g., primary production, respiration), anthropogenic (e.g., urbanization, pollution) and geological processes (e.g., tectonics, rock weathering) influence the critical zone and oceans, and in turn how these cycles influence life and climate. Field studies focus on tropical marine biogeochemistry of coral reefs, mangrove forests, seagrass meadows, lagoons and estuaries. Course includes a required week-long field trip to a remote field station in Panama. There are additional costs associated with field trip expenses, but students can apply for travel assistance. All students must meet basic term abroad requirements and submit an application. This course is open to all students, but preference will be given to those with a declared major in geosciences, environmental science, chemistry, or biology. **Cross-Listed:** BIO 235 **Corequisite(s):** GEO 305L **Prereq/Corequisite(s):** Take a course from either BIO, CHM, GEO or ENS 100 . **CC:** WAC, WAC-R **ISP:** ENS

GEO 307 - Structural Geology

Course Units: 1.0 In Structural Geology we study the geometry and dynamics of deformed rocks, using detailed descriptions and kinematic analysis of field sites. If we wish to understand the formation of mountain belts, or their climatically controlled destruction, the relationship of one rock unit to another, or one mineral grain to the next is of fundamental importance. Students will acquire the tools necessary to describe and understand the geometry and dynamics of deformed rocks and the larger-scale orogenies they are a part of, with a practical focus on field work to understand the structural evolution of eastern New York. We will explore stress and strain, folding, faulting, cleavage formation, map interpretation, and the relationships between plate tectonic settings and crustal structure. There is a major emphasis on developing and sharpening of multi-dimensional reasoning skills. Students will also gain experience writing scientific reports which integrate observational data, field measurements, and the existing literature. In addition to several local field trips during lab, the course includes a weekend trip to explore key localities from the Taconic Orogeny in Massachusetts and Vermont. **Prerequisite(s):** Any geosciences course numbered 200 or higher, or permission of the instructor. **Corequisite(s):** GEO 307L

GEO 320 - Petrology of Igneous and Metamorphic Rocks

Course Units: 1.0 Petrology is the study of rocks and the conditions under which they form and evolve. This course will explore how the processes of melting and subsequent crystallization creates igneous rocks in different tectonic environments and how heat, pressure, and strain create metamorphic rocks. Emphasis will be on integrating different types of data (e.g. field observations, mineral assemblages, whole-rock geochemistry, mineral compositions) to understand the origin and evolution of rocks in igneous and metamorphic systems. Students will examine and characterize minerals, textures, and compositions of rocks in thin sections using a polarizing microscope, scanning electron microscope, and laser ablation inductively-coupled mass spectrometer. Rock sample suites studied could include those from Iceland, Montserrat, Mexico, New England, the Stillwater Complex (MT), and Dutchess County, NY. The course includes local field trips to see outcrops and collect samples on 2-3 weekend days to the Adirondacks, Catskills, and/or Vermont and Massachusetts. **Prerequisite(s):** GEO 220 **Corequisite(s):** GEO 320L **ISP:** ENS

- Any Geosciences mini-term.

Energy and Environmental Physics

PHY 110 - Physics for the Life Sciences 1

Course Units: 1.0 An introduction to classical mechanics, fluids, and thermodynamics with applications in the life sciences. Students must major in a life science or be admitted by permission of the instructor. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **Corequisite(s):** PHY 110L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

and

PHY 111 - Physics for the Life Sciences 2

Course Units: 1.0 An introduction to electromagnetism, optics, and the structure of matter with applications in the life sciences. **Prerequisite(s):** PHY 110 , PHY 120 ,MTH 102 , MTH 112 ,or MTH 113 **Corequisite(s):** PHY 111L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

OR

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

and

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

OR

IMP 120 - Integrated Math/Physics

Course Units: 2.0 An introductory team-taught, two-term-long sequence of integrated courses, two in mathematics and two in physics, roughly spanning the content of MTH 115 , MTH 117 , PHY 120 and PHY 121 . Designed for engineering students as well as other interested students. **Prerequisite(s):** MTH 113 , by invitation. **CC:** QMR, SCLB, GNPS **ISP:** ENS

and

IMP 121 - Integrated Math/Physics

Course Units: 2.0 An introductory team-taught, two-term-long sequence of integrated courses, two in mathematics and two in physics, roughly spanning the content of MTH 115 , MTH 117 , PHY 120 and PHY 121 . Designed for engineering students as well as other interested students. **Prerequisite(s):** IMP 120 **CC:** QMR, SCLB **ISP:** ENS

and four from the following:

ENS 200 - Energy

Course Units: 1.0 Designed to acquaint the student with the many societal and technological problems facing the United States and the world due to the ever increasing demand for energy. **Corequisite(s):** ENS 200L **Lecture/Lab Hours** One lab per week. **ISP:** ENS

ENS 209 - Renewable Energy Systems

Course Units: 1.0 The study of renewable energy resources and the conversion technologies available to utilize them to meet society's energy needs. Topics include forms of energy; First and Second Laws of Thermodynamics; energy conversion and efficiency; sustainability; energy storage. Historical perspective on world and U.S. energy usage, conversion technologies, and energy resources. Fundamentals of the conversion processes and systems involved in the use of solar thermal and photovoltaic, wind, bioenergy, geothermal, thermoelectric, hydro and ocean technologies. The use of hydrogen as a fuel and technologies to produce and use it. Economic and environmental issues relevant to renewable energy resources. Class will be supplemented with laboratory demonstrations and field trips to visit existing renewable energy systems. **Prerequisite(s):** MER 231 or PHY 122 **Corequisite(s):** ENS 209L **CC:** SET **ISP:** ENS, STS

ENS 253 - Environmentally Friendly Buildings

Course Units: 1.0 Many energy consumption and adverse environmental effects are attributable to buildings and their use. In this course, through instructions, hands-on experience, computer simulation, and research, the students will become acquainted with the inner workings of the subsystems in buildings: foundations, framings, walls, sidings, roof, electrical systems, lighting, appliances, heating, air-conditioning, ventilation, indoor air quality, basement, crawl space, attic, water and moisture management; plumbing, flooring, finishes, furniture, insulation, xeriscaping, and LEED rating system. The students will become aware of indoor and outdoor environmental issues and the life cycle costs of the existing systems. They will also learn the latest science and technology to reduce the negative effect of these subsystems on the environment. Laboratory: hands-on experience with the above subsystems, site visits, Computer simulations, research, projects, and presentations. There are no prerequisites for this course and it is open to all students. **Corequisite(s):** ENS 253L **CC:** SET, GDQR, GETS, SCLB **ISP:** ENS, STS

GEO 303 - Earthquakes and the study of the Earth's Interior

Course Units: 1.0 In this course students will learn about the various geophysical methods used to probe the Earth's interior. With a heavy focus on earthquakes and seismology, the course explores the question of how we learn about the Earth beneath our feet. Through the hands-on use of modern geophysical field equipment we will explore the deep and shallow structure of the whole earth. We will learn about finding geological resources and about the physical explanations for plate tectonics. We will also examine how radioactivity and heat flow within the earth can tell us about our warming climate. A common thread throughout the course is computer modeling, data acquisition, signal processing and associated uncertainties. By the end of the course, students will have a familiarity with the differences between the many geophysical surveying methods and the different cases in which they could be employed. **Prerequisite(s):** Any 100-level geosciences or physics course or ENS 100 **Corequisite(s):** GEO 303L **ISP:** ENS

MER 231 - Thermodynamics 1

Course Units: 1.0 A basic engineering science course dealing with relations between heat and other forms of energy. Topics include: basic thermodynamic principles, properties of simple substances, energy and the first law of thermodynamics, entropy and the second law of thermodynamics, and ideal cycle analysis. Elementary environmental economic and sustainability considerations related to thermodynamic processes. **Prerequisite(s):** PHY 120 & (MTH 112 or MTH 113) or IMP 120. **Corequisite(s):** CHM 101 **CC:** ENS

MER 471 - Solar Energy Analysis and Design

Course Units: 1.0 Analysis and design applicable to the use of solar energy for heating, cooling, and electric power generation. Solar geometry, solar collector positioning, energy storage, and component and system design. **Prerequisite(s):** MER 333 or by permission of instructor. **CC:** SET **ISP:** ENS

PHY 122 - Relativity, Quantum, and Their Applications

Course Units: 1.0 Calculus-based introduction to the structure of matter, including quantum effects, particle, nuclear, atomic, molecular, and solid state physics, and applications to materials of interest to engineers and scientists. **Prerequisite(s):** PHY 121 IMP 113 or IMP 121 . **Corequisite(s):** PHY-122L **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

PHY 123 - Heat and Light

Course Units: 1.0 Calculus-based introduction to thermodynamics, geometric and physical optics, and astrophysics. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 121 or IMP 121 . **CC:** ENS

PHY 220 - Relativity and Introduction to Quantum Mechanics

Course Units: 1.0 A second course in modern physics covering special relativity and an introduction to quantum mechanics. Topics include relativistic kinematics, relativistic dynamics, four-vector notation, relativistic collisions, origins of quantum mechanics, Schrodinger's equation and the development of wave mechanics, applications of wave mechanics in one and three dimensions (step potential, square well, harmonic oscillator), angular momentum operators, the hydrogen atom, Dirac notation and matrix formulation of linear operators, Dirac Delta function, spin angular momentum, measurement theory, and time-independent perturbation theory. **Prerequisite(s):** PHY 122 **CC:** ENS **Lecture/Lab Hours** One hour computational lab each week.

PHY 300 - Methods of Modern Experimental Physics

Course Units: 1.0 A laboratory-based course dealing with contemporary techniques in experimental physics. **Prerequisite(s):** PHY 122 and one physics course at the 200-level or higher, or permission of the instructor. **CC:** WAC **ISP:** ENS

PHY 310 - Advanced Topics in Physics 1

Course Units: 1.0 Course topic for each year to be chosen from the following: Computational Physics: A laboratory-based course providing practical tools to solve computational physics problems drawn from a wide range of areas, including classical mechanics, electromagnetism, special relativity, and quantum mechanics. Algorithms include root-finders, integration techniques, Monte Carlo methods, ordinary and partial differential equation solvers, numerical Fourier transforms, minimization tools, and numerical linear algebra algorithms. Condensed Matter Physics: An introduction to the microscopic structures and to the electrical and thermal properties of metals, insulators, and semiconductors. Topics include the description of crystal lattices, electrons in a periodic potential, electronic band theory, phonons and their interactions with electrons, cohesive energy of solids, defect states, and superconductivity. Modern Physical Optics: Interference, diffraction and polarization of light, interaction of light and matter, classical and quantum description of optics, and lasers. Three-hour lab each week. Nuclear/Elementary Particle Physics: An introduction to both nuclear and particle physics covering basic nuclear structure and properties, nuclear models, nuclear decay and radioactivity, nuclear reactions, fission, fusion, accelerators, elementary particle physics, and the quark model. Statistical Mechanics: Probability theory, laws of thermodynamics, kinetic theory of gases and the statistical basis of thermodynamics, Bose Einstein and Fermi Dirac distributions, applications to simple fluids, magnetic systems, metals, photons, and superfluid helium. Advanced Electromagnetism: Relativistic electrodynamics, electromagnetic radiation and waves. Quantum Optics: The study of the interaction of light and matter in systems where the wave nature of matter and the particle nature of light must be taken into account. Topics may include single-

photon interference, correlated photons and the EPR paradox, quantum computing, quantum cryptography and quantum teleportation, atom optics and atom interferometry, laser cooling and Bose-Einstein Condensation, and implications of quantum mechanics for nanomaterials and nanodevices. Electronics: A laboratory course in basic electronics and instrumentation for science majors. Topics include AC and DC circuits, diodes, rectifiers, transistors, operational amplifiers, binary logic, Boolean algebra, digital circuits, analog-digital conversion, transducers, and computer interfacing. Six hours of lab each week. Others depending upon student interest. **Prerequisite(s):** Course open to juniors and seniors only. Enrollment by permission of the instructor. **ISP:** ENS

Environmental Engineering and Technology

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

and five from the following:

CEE 208 - Water, Sanitation, Health

Course Units: 1 This course will examine the connections between water, sanitation, and public health. Students will learn about water sources and potential sources of contamination; the role of drinking water and wastewater treatment in reducing outbreaks of disease; and explore real world examples of water and sanitation concerns. Students will work in small teams to critically explore a global water, sanitation and health issue of interest to them with the goal of understanding the physical and societal drivers of the issue, key constraints, and potential solutions. **CC:** GETS **ISP:** ENS

CHM 245 - Environmental Chemistry

Course Units: 1.0 A course focused on the role of chemical principles such as chemical equilibrium, kinetics and chemical structure in understanding natural environmental cycles and the impacts of human activity on those cycles. Topics covered include: aquatic chemistry and water pollution, atmospheric chemistry and air pollution, energy and climate change, and toxic organic chemicals in the environment. **Prerequisite(s):** CHM 231 **CC:** SET **ISP:** ENS

ENS 200 - Energy

Course Units: 1.0 Designed to acquaint the student with the many societal and technological problems facing the United States and the world due to the ever increasing demand for energy. **Corequisite(s):** ENS 200L **Lecture/Lab Hours** One lab per week. **ISP:** ENS

ENS 208 - Waste Management and Recycling

Course Units: 1.0 This course will introduce students to various sources of solid waste materials including hazardous and nonhazardous waste, and biodegradable and non-biodegradable waste. Focus areas are overview of landfill systems, geosynthetics, geotextiles, geomembranes, geonets, single clay liner, single geomembrane liner, composite liner systems, leak detection and leachate collection, removal and treatment of leachate, and capping and closure systems. The recycling segment will explore natural resources of raw materials including origin and use. It will also investigate the potential and limitation for recycling of materials. The focus area will be various applications of recycling recyclable and nonrecyclable materials especially non-biodegradable waste. Discussion of methods of manufacture and compositions of such materials will concentrate on advanced industrial applications for the reuse of

non-recyclable waste materials. Application areas include production of new materials, materials with superior qualities for special purposes, and materials with high level of resistance against certain environmental conditions. The course will also touch on the political aspect of recycling including consumer attitude and government incentives to encourage recycling. **Prerequisite(s):** ENS 100 or GEO 110 **CC:** SET, GETS **ISP:** ENS, STS

ENS 209 - Renewable Energy Systems

Course Units: 1.0 The study of renewable energy resources and the conversion technologies available to utilize them to meet society's energy needs. Topics include forms of energy; First and Second Laws of Thermodynamics; energy conversion and efficiency; sustainability; energy storage. Historical perspective on world and U.S. energy usage, conversion technologies, and energy resources. Fundamentals of the conversion processes and systems involved in the use of solar thermal and photovoltaic, wind, bioenergy, geothermal, thermoelectric, hydro and ocean technologies. The use of hydrogen as a fuel and technologies to produce and use it. Economic and environmental issues relevant to renewable energy resources. Class will be supplemented with laboratory demonstrations and field trips to visit existing renewable energy systems. **Prerequisite(s):** MER 231 or PHY 122 **Corequisite(s):** ENS 209L **CC:** SET **ISP:** ENS, STS

ENS 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on earth and is a vital source of water for household, industrial, and agricultural uses worldwide. The well-being and prosperity of human civilization requires the sound stewardship and sustainable use of our groundwater supplies. In addition to serving as an essential resource for humanity, groundwater plays a central role in many environmental and geologic processes, including the maintenance of river flows between rainfall events, the occurrence of earthquakes, and the genesis of certain types of ore deposits and landforms. Groundwater is also a key consideration in many engineering operations such as the construction of dams and tunnels and the assessment of landslide and land subsidence risk. Groundwater hydrology is a highly interdisciplinary field that brings together the geologic and environmental sciences with engineering. This course will begin by exploring the physical properties of groundwater and the geologic media through which it flows, the physical laws that govern groundwater flow and transport, and techniques for modeling groundwater flow patterns. The mid-part of the course will focus on the engineering aspects of groundwater, covering topics such as the hydraulics of pumping wells, the transport of contaminants within aquifers, the remediation of contaminated aquifers, and well-drilling technology. Later we will cover the role groundwater plays in geologic processes and the role of geology in determining groundwater chemistry and quality. We will also discuss the connections between groundwater and human health and the importance of groundwater in the global food supply. Students will leave this course with the fundamental knowledge needed to begin answering scientific and engineering questions in the fascinating world of groundwater hydrology. **Cross-Listed:** GEO 210 **Prerequisite(s):** ENS 100 or any GEO course numbered 110 or higher. **CC:** GDQR, GETS, GNPS **Lecture/Lab Hours** One lab per week. **ISP:** ENS

ENS 215 - Exploring Environmental Data

Course Units: 1.0 Understanding how the Earth and environment works requires the careful analysis and interpretation of scientific data. Increasingly, the limitations to our understanding lie not in the availability of data, but rather in our ability to analyze and find meaning in it. Deriving insight from environmental data, in particular large and complex datasets, requires new tools, methods, and ways of thinking. In this class we are going to learn how to code in the programming language R and use it to analyze environmental data in order to better understand the Earth's systems. This course will feature a hands-on classroom with programming and data analysis occurring interactively during the class. Students will learn how to analyze and visualize large datasets and how to write code, while also covering interesting components of environmental and Earth sciences. **Prerequisite(s):** Any SET or SCLB. **CC:** SCLB, QMR, GDQR **Lecture/Lab Hours** Weekly lab required. **ISP:** ENS

ENS 222 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** MLT 209 **CC:** LCC, SET, HUM, HUL, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

ENS 234 - No Nonsense Sensors

Course Units: 1 Humans sense. They use their senses to monitor their surroundings. The basic five human senses are sight, hearing, smell, taste, and touch, and the sensory organs humans use to do these functions are the eyes, ear, nose tongue, and skin. Humans have had a long history of fascination with building devices that do sensory tasks. These are sensors, and unlike human sense, they are sleepless by design. The use of sensors has recently exploded. Sensor applications have penetrated many fields such as consumer products, healthcare, communication, transportation, industrial processes, sports, security, space, military, and the environment, to name a few. The presence of sensors is all around us in almost everything we use and come across in our daily life. Starting with smartphones, passing through sensor-activated lights in hallways, and ending with remotely sensed images that we receive from satellites orbiting Planet Earth from outer space. Sensors have invaded every aspect of human life and are predicted to be so pervasive in many extraordinary applications that will significantly enhance humans" quality of life. This course is designed for students interested in learning more about sensors and their human applications i adding a level of convenience never thought possible before. **CC:** SET, GETS **ISP:** ENS, STS

ENS 247 - Sustainable Infrastructure

Course Units: 1.0 Infrastructure is the backbone of nations. It is a society's inventory of systems and facilities that allow it to function properly and smoothly. This includes, but is not limited to, roads, bridges, tunnels, dams, transit, waterways, ports, aviation, pipelines, transmission lines, rail, parks, and public buildings such as schools, courts, hospitals, and recreational and sport facilities. Infrastructure involves services such as energy, water supply, wastewater treatment, power and gas distribution grids, waste collection, and sewer disposal. Major advances in technology resulted in digital infrastructure that includes communication networks, signal transmission towers, data centers, information repositories, servers/computers, and the Internet. This course explores the progress humanity achieved in developing infrastructure facilities and the present move towards sustainability. Methods, materials, processes, technologies, practices, and operations required to maintain a healthy environment and efficient infrastructure will be examined. The intersection between policies necessary for sustainable infrastructure and political, economic, social, societal, and cultural factors will be emphasized. **CC:** SET, GETS **Lecture/Lab Hours** Four class hours weekly. **ISP:** ENS, STS

ENS 252 - Geoenvironmental Applications

Course Units: 1.0 This course introduces field applications related to soil and water. It explores the natural characteristics and testing of soil as a construction material and as a bearing layer. It covers seepage analysis, aquifers, and well fields. It details the components of containment systems for waste disposal to alleviate environmental pollution and contamination. It also presents the basics of water movement in closed conduits and in open channels, and the development of supply networks. For labs, students gain experience in utilizing industry-standard testing methods of the American Society for Testing and Materials (ASTM). Tests include soil classification, composition, flow and permeability, compaction, compressibility, strength, slope stability, and environmental geotechnology with focus on the Environmental Protection Agency's (EPA) design specifications. **Prerequisite(s):** MTH 112 or higher, and PHY 120 or higher. **Corequisite(s):** ENS 252L **CC:** SCLB **Lecture/Lab Hours** Three class hours and a weekly lab. **ISP:** ENS, STS

ENS 253 - Environmentally Friendly Buildings

Course Units: 1.0 Many energy consumption and adverse environmental effects are attributable to buildings and their use. In this course, through instructions, hands-on experience, computer simulation, and research, the students will become acquainted with the inner workings of the subsystems in buildings: foundations, framings, walls, sidings, roof, electrical systems, lighting, appliances, heating, air-conditioning, ventilation, indoor air quality, basement, crawl space, attic, water and moisture management; plumbing, flooring, finishes, furniture, insulation, xeriscaping, and LEED rating system. The students will become aware of indoor and outdoor environmental issues and the life cycle costs of the existing systems. They will also learn the latest science and technology to reduce the negative effect of these subsystems on the environment. Laboratory: hands-on experience with the above subsystems, site visits, Computer simulations, research, projects, and presentations. There are no prerequisites for this course and it is open to all students. **Corequisite(s):** ENS 253L **CC:** SET, GDQR, GETS, SCLB **ISP:** ENS, STS

ENS 277 - The Water Paradox

Course Units: 1.0 Fresh water is tasteless, odorless, and colorless. These characteristics make water one of the most intriguing materials. It is a necessity for life. A paradox involves features or qualities of contradictory nature. Water is notorious with such qualities. Water is one of the cheapest materials yet it is the most precious commodity known to humanity. Water could be the source of peace and development yet it could be a reason for war and conflict. Water could be a force for good to generate hydropower yet unchecked or unregulated this force could be in the form of destructive floods. Water could be a weapon to combat desertification yet too much thereof could cause erosion and failures. Floods come with loads of mud and silt that charge river deltas and keep them fertile yet weaker floods result in lesser deposits that could threaten river deltas with sea attacks. Water has always been a main reason for people to settle the land yet a shortage thereof could force people to migrate and leave their homeland. This course shows the role water played in the past, is presently playing, and will play in the future in defining communities and societies. **CC:** SET, GETS **ISP:** ENS, STS

ENS 291 - Construction for Humanity

Course Units: 1.0 An interdisciplinary introduction to the technology of construction and the social uses of building by humans. The course will consider types of building materials and their application to domestic housing, castles, cathedrals, palaces, monuments, dams, bridges, tunnels, factories, and office buildings. **Cross-Listed:** HST 291 **CC:** SET, GETS **ISP:** ENS, STS

ENS 299 - Environmental Forensics

Course Units: 1.0 An interdisciplinary course that will present topics detailing the intersection between the environment, ethics, law, society, litigation, policy, economics, pollution/contamination, cleanup, testing, standards, and sustainability. Sources of environmental problems are usually related to emissions, pollution, contamination, and/or waste disposal. Whether the cause is intentional or non-intentional, natural factors or a man-made disaster, or due to normal operation or accident, a crisis ensues and cleanup becomes necessary. This inevitably leads to legal actions and litigations that rely on experts in conducting scientific investigations to establish the facts surrounding potential controversies. Topics discussed in the course include liability, environmental site assessment, insurance litigation, toxic torts, science tools, sampling & measurements, statistical analysis, chemical fingerprinting, contaminant transport models, and environmental forensic microscopy. The course will illustrate the above points using case studies. **CC:** SET, GETS, WAC **ISP:** ENS, STS

- ESC 370 - Engineering Economics

GEO 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on Earth and serves as a vital resource that supports the economies and ecosystems of the world - including providing much of the irrigation water that grows our food, supplying drinking water to over 2 billion people, and sustaining surface water bodies and groundwater dependent ecosystems. With the world's groundwater resources threatened by intensive groundwater pumping,

environmental and climate change, and the release of contaminants into the environment, there is a pressing need to better understand and manage this resource. Groundwater hydrology is a highly interdisciplinary field that brings together the geologic and environmental sciences with engineering. This course will begin by exploring the environmental and geologic factors that influence the occurrence and movement of groundwater. We will then delve into the physical laws the govern groundwater flow and learn how to model these flows. Later in the course we will cover the role of groundwater in a range of geologic and ecological processes. We will also cover engineering applications of groundwater such as the hydraulics of pumping wells, land subsidence, and the movement of contaminants within aquifers. Students will leave this course with the fundamental knowledge needed to begin answering the scientific and engineering challenges related to our groundwater resources. **Cross-Listed:** ENS 210 **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 210L **CC:** GDQR, GETS, GNPS **ISP:** ENS

HST 291 - Construction for Humanity

Course Units: 1.0 An interdisciplinary introduction to the technology of construction and the social uses of building by humans. The course considers types of building materials and their application to domestic housing, castles, cathedrals, palaces, monuments, dams, bridges, tunnels, and skyscrapers. **Cross-Listed:** ENS 291 **CC:** SET, SOCS, GETS **ISP:** ENS, STS

MER 231 - Thermodynamics 1

Course Units: 1.0 A basic engineering science course dealing with relations between heat and other forms of energy. Topics include: basic thermodynamic principles, properties of simple substances, energy and the first law of thermodynamics, entropy and the second law of thermodynamics, and ideal cycle analysis. Elementary environmental economic and sustainability considerations related to thermodynamic processes. **Prerequisite(s):** PHY 120 & (MTH 112 or MTH 113) or IMP 120. **Corequisite(s):** CHM 101 **CC:** ENS

TAB 333T - New Zealand Mini-Term Abroad

Course Units: 1 **CC:** LCC **ISP:** ENS

D. Senior Seminar

ENS 460 - Environmental Science & Policy Senior Seminar

Course Units: 1.0 This capstone course for the environmental science and policy program brings together the expertise and experience of all environmental science and policy seniors to study contemporary environmental issues, usually related to a single topic or small number of topics. Issues may include legal cases, legislation and regulation, application of technology to social problems, and national and global environmental policy. Class time may include discussion, debate, field trips, class presentations, and outside speakers. Research and presentation of findings will be stressed. **Prerequisite(s):** Senior standing; Environmental Policy or Environmental Science Major **ISP:** ENS

E. One, Two or Three-Term Senior Research Project

One-Term Option:

ENS 492 - Environmental Science Senior Research

Course Units: 1

Two-Term Option:

ENS 493 - Environmental Science Research 1

Course Units:

ENS 494 - Environmental Science Research 2

Course Units:

Three-Term Option

- ENS 493 Environmental Science Research 1
- ENS 494 Environmental Science Research 2

ENS 495 - Environmental Science Research 3

Course Units:

Requirements for Honors in Environmental Science, Policy, and Engineering:

The major requirements as specified above are required, as are the GPA requirements of Union College described elsewhere in this catalog. A senior research thesis is required, consisting of at least two terms of ENS 497 and ENS 498 (independent research with a faculty member) and presentation at Steinmetz Symposium or other conference as approved by the advisor.

Ethics Across the Curriculum

Director: Professor B. Baker (Philosophy)

Ethics Across the Curriculum, funded by alumnus Michael Rapaport ('59), is a college-wide initiative that provides support for faculty to incorporate teaching about everyday ethics into their course curricula. Everyday ethics is about integrity and cheating, honesty and dishonesty, justice and injustice. Courses incorporating an Ethics Across the Curriculum segment help students learn what everyday ethics is and how its principles are incorporated into many disciplines that deal with substantive issues other than ethics, such as anthropology, chemistry, engineering, and literature.

Art History

AAH 208 - The Business of Visual Art and Contemporary Entrepreneurship

Chemistry

CHM 260 - Inorganic Chemistry

Classics

CLS 146 - Sex and Gender in Classical Antiquity
CLS 178 - Ancient World Mythology

Computer Science

CSC 106 - Can Computers Think? Introduction to Computer Science
(ethics component included when taught by K. Striegnitz)

Economics

ECO 101 - Introduction to Economics
ECO 225 - Economics of Sin
ECO 226 - Financial Markets
ECO 230 - Mind of the Entrepreneur
ECO 331 - E-Commerce Economics
ECO 334 - Introduction to Financial Analysis
ECO 375 - Seminar in Efficient Management of Technology

Engineering

SMS 123 - Ethics, Technology & Society

English

EGL 101 - The Study of Literature: Fiction
EGL 231 - Nineteenth-Century American Literature
EGL 237 - Reclamation & Renaissance: Black Literary Arts 1900 to 1960, "Dark Like Me - That is my Dream!"
EGL 279 - Literature and Science
EGL 254 - Discourses on the Viet Nam/American War
EGL 296 - Screenwriting Workshop

Environmental Science

ENS 110 - Introduction to Environmental Science

History

HST 124 - Monuments, Museums, and Movies: Introduction to Public History

Psychology

PSY 300 - Research Methods in Psychology

Sociology

SOC 360 - Domestic Violence

Film Studies

Co-Directors: Associate Professor M. Chilcoat (Modern Languages and Literatures), Associate Professor Jenelle Troxell (English)
Faculty: Senior Lecturer and Filmmaker in Residence J. de Sève

Interdisciplinary and inclusive, the Film Studies program raises students' conscious awareness of film as a prime art and popular form of mass communication, and develops students' abilities to recognize and navigate the discourse particular to this medium as both consumers and producers. Course offerings span an array of languages, geographies, and time periods, and cover theory, history and critical analysis of films that allow students to train their critical eye on film representations of race and ethnicity, gender, sexuality, class, age and ability. Students gain experience analyzing, evaluating, and critiquing film in light of diverse cinematic cultures, traditions, histories, and ideologies. This knowledge both enriches and is enriched by screenwriting and hands-on film production courses. Film Studies minors

thus hone soft and hard skills including critical thinking, speaking, writing, and listening; technical production, social awareness, and teamwork which readily transfer to a wide range of professional, creative and academic pathways within and beyond the film industry.

Film Studies Minor

Requirements for the Minor:

A minimum of six approved courses from at least two of the following categories: I. Film History and Culture, II. Film: Disciplines, Theory, Criticism, and III. Film Technologies (see listings below; consult home department or program catalogue listings for course descriptions). In some cases, film courses entail prerequisite requirements; please consult catalogue for prerequisite information. Most Film Studies courses are taught in English, though not all. Consult catalogue for prerequisites for Film Studies courses not conducted in English. All courses for the Film Studies Minor must be approved by the Film Studies Program Directors. If you think a course should count for the Film Studies Minor but is not listed below, contact the Program Directors.

Courses

I. Film History and Cultures

AAH 222 - History of Photography

Course Units: 1.0 An introductory survey of the history of photography from its pre-history to the present. We will explore the evolution of photographic expression in the period, and focus on relationships between photography and fine art, photography and popular culture, and photography and theory. We will spend time studying first-hand the original photographic works housed in Special Collections, Schaffer Library and in the Union College Permanent Collection. **CC:** HUM, JCHF, JCAD **ISP:** AMS, FLM

CLS 151 - The Ancient World in Film and Literature

Course Units: 1.0 Greco-Roman antiquity has been a favorite topic of Hollywood for years. This fascination continues today, with the recent appearance of major blockbusters as well as TV productions. Why do the Greeks and Romans appeal to a modern audience? This course will consider ancient texts in translation alongside their modern film representations. Our goal will not be to consider where the films went "wrong." Instead, we will question how these films recast and reinterpret classical texts to reflect modern interests. This course will include an "entrepreneurship module." We will question what is entrepreneurship and if Hollywood's commodification of the ancient world is entrepreneurial. **CC:** LCC, HUL, HUM, JCAD, JCHF, JLIT **ISP:** AMS, FLM

EGL 255 - Asian American Literature and Film

Course Units: 1.0 If you are interested in the diverse history of Asian immigration in the U.S., take this course. Together as a class, we will examine major historical moments in Asian America: the first wave of Asian immigration in the mid-nineteenth century, the anti-Asian laws of the late nineteenth century, the Japanese internment during the Second World War, the emergence of Asian American studies during the 1960s Civil Rights Movement, Southeast Asian refugees after the Viet Nam/American War, and the contemporary turns to the transnational and the pan ethnic. To cover these historical moments, we will read the following texts: Island: Poetry and History of Chinese Immigrants on Angel Island, Eat a Bowl of Tea, Farwell to Manzanar, When Broken Glass Floats, American Born Chinese, and American Son. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AIS, AMS, FLM

EGL 258 - Changing Ireland

Course Units: 1.0 This course will be looking at the changing nature of Irish society since the economic boom of Celtic Tiger Ireland in the 1990's. EU membership, US investment and the effects of global internationalism have brought about radical culture transformations in the country which in turn are altering conventional meanings of Irishness and Irish identity. We will be looking at representations of this changing Ireland in literature and film, paying attention to issues such as new technologies, post-feminism, sexualities, race and ethnicity. Texts will include Martin McDonagh's *In Bruges*, Anne Enright's novel *The Wig My Father Wore*, and the poetry of Leanne O'Sullivan. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM **ISP:** FLM, GSWS

EGL 259 - Irish Literature and Film

Course Units: 1.0 The aim of this course is to introduce you to the field of Irish Studies, examining how issues relating to language, identity and nationhood are intimately connected in Irish literature and film. In this course we will be studying Irish literary texts from the beginning of the 19th century to the late 20th century, examined alongside a selection of contemporary films. This course will ask you to consider the ways in which cultural concerns of the Irish past continue to haunt the landscape of the present day, paying attention to issues of gender, class, race and sexuality. Texts will include Lady Morgan's *Wild Irish Girl*, Bram Stoker's *Dracula*, Samuel Beckett's *Waiting for Godot* and Neil Jordan's film *Michael Collins*. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, LCC, HUM **ISP:** FLM, GSWS

FRN 312 - What is French Cinema?/Qu'est-ce que le cinema francais?

Course Units: 1.0 This course moves from an introduction to the earliest examples of French and world cinema, to an in-depth study of widely recognized classics of French cinema, considered in chronological order from 1933 to 1985, so as to develop an appreciation for the history, genre, and particular theme(s) of each film, as well as its originality. Students will learn how to talk about and write analytical papers on the films according to critical, cultural, and technological considerations, in order to determine what, if anything, is particularly "French" about French cinema. The course is taught in English, but students taking the course for French credit will read all materials in French, and assignments will be written in French. **Cross-Listed:** MLT 215 **CC:** HUM, LCCF **ISP:** FLM

GER 402 - German Film Studies

Course Units: 1.0 Needs to have completed GER 201 or the equivalent; contact any German professor for permission if you have experience in the language. **Prerequisite(s):** Any 300-level course or permission of the instructor. **CC:** HUM, LCCG, JWOL **ISP:** FLM, GSW

HST 333 - Hollywood Film

Course Units: 1.0 In studying the history of Hollywood film, then, we will study one of the most important elements of American culture as seen at home and from abroad. Our objectives in this course will be to get behind the cliches and platitudes about the Hollywood experience to its more complex and substantive history. We will learn the basic chronology of American dramatic film history, the tools of historical film research and some of the methods of technical film analysis. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS **ISP:** AMS, FLM

HST 366 - British Cinema

Course Units: 1.0 What films come to mind when you see the words "British Cinema"? Alfred Hitchcock's 39 Steps or Carol Reed's classic film noir The Third Man? Fabulous historical epics like Zulu, Elizabeth, or Braveheart? Comedies

from The Ladykillers to the unclothed Sheffield steelworkers of The Full Monty? The tale of football of multicultural Britain that is Bend It Like Beckham? This course will study the historical development of British cinema, tracing its roots from music halls at the turn of century to the multiplexes of a globalized culture dominated by Hollywood. We will also explore the different types and genres of film to be found in British cinema: realism and expressionism, cinema as national popular culture, humor and horror, constructions of Britishness, film as an ideological medium, films that pushed the boundaries of sex and orientation, epics, and imperial and post-colonial themes that played out on the screen. By the end of this course you will understand the complex and diverse character of British cinema through the analysis of actual films and engagement with critical studies of them. This is a course for advanced students taught in an intensive seminar format; you will be expected to view films outside of class time. **Prerequisite(s):** Any 100-level or 200-level history or film studies course or permission of the instructor. **CC:** LCC, SOCS, WAC **ISP:** FLM

MLT 201 - Chinese Cinemas

Course Units: 1.0 From the glitzy production studios of 1930s Shanghai to the contemporary hinterlands of China, the backstreets of Hong Kong, and the towns of Taiwan, this course examines the
development and transformation of Chinese cinema. It will explore questions of aesthetics, Chinese identity, transnationalism, and representation. **CC:** HUM, LCC, WAC **ISP:** AIS, FLM

MLT 203 - Asian American Film and Performance

Course Units: 1.0 An examination of topics in Asian American studies through film and performance by and about Asian Americans. Class material draws from independent filmmakers, theatrical and artistic performances, as well as theoretical and critical texts on culture and diversity, gender, the diaspora, and ethnicity. **CC:** HUM, LCC **ISP:** AIS, AMS, FLM, GSWS

MLT 260 - The Vampire as Other in East European and American Culture

Course Units: 1.0 We will discuss the present distribution of the East European peoples, their prehistory, and their relation to other peoples of Europe and Asia. We will also survey their early culture, including pagan, animistic, and dualistic religious beliefs, and Christianization. Our focus will be the myth of the vampire, which has had enduring power not only in Eastern European folk belief but also in American popular culture right up to the present day. **CC:** HUL, HUM, LCC, JCHF, JLIT **ISP:** FLM, REE

MLT 265 - Soviet and Russian Film Revolutions: Political, Social, Cultural

Course Units: 1.0 At its inception, Soviet film was intertwined with political revolution. In masterpieces such as Eisenstein's The Battleship Potemkin and Pudovkin's Mother, film directors sought to portray the Bolshevik take-over as a legitimate and inevitable response to oppression. Who could imagine that the same country would produce Little Vera, a film about the sexual revolution of the 1980's or Brother, a hero-story about assassins? This course will follow the trajectory of Soviet and Russian cinema from the 1917 Revolution to the present day, as it was used to chronicle social and cultural upheavals. **CC:** HUM, LCC **ISP:** FLM, REE

MLT 273 - Introduction to Spanish Cinema

Course Units: 1.0 This course examines canonical and non-canonical Spanish cinema by well-known as well as lesser-known filmmakers. In addressing questions pertaining to national and regional identities, the Spanish Civil War and the Franco dictatorship, the Spanish transition to a democratic republic and its evolving cultural values, and the country's subsequent incorporation into the European Union, the course also revisits Spain's imperial past and the country's place, today, in world affairs. Students should expect to acquire greater knowledge of Spanish cultural diversity and history, while developing further their film analysis, conversation, and writing skills. **CC:** HUM **ISP:** FLM

MLT 281 - Screening Identities in Latin American Cinema

Course Units: 1.0 A survey of the main trends in film production in Latin America since the 1950s. Readings and discussions on issues of film history, aesthetics, representation and reception will frame our critical reflection on the construction of various types identities in some of the national cinemas across Latin America. **CC:** HUM, LCC, JCAD, JCHF, WAC **ISP:** FLM, GSWS, LAS

MLT 286T - Gender and Identity in Contemporary Latin American Cinema

Course Units: 1.0 This course offers an interdisciplinary study of contemporary Latin American cinema focusing on issues of representation, reception and spectatorship, and the construction of (national, cultural, gender, and racial) identity. Besides the films, reviews and substantive readings will contribute to an examination of five main topics: 1) Constructions of Gender; 2) Representations of National Identity; 3) Race and Class; 4) Queer Images; and, 5) Imagining Marginality. All films studied in class will link two or more of these topics. **CC:** HUM, LCC **ISP:** FLM, GSWS, LAS

MLT 293 - Made in New York: Puerto Rican and Dominican Transnational Identities in American Literature & Cinema

Course Units: 1.0 The course is a survey of the cultural production and representation of the Dominican and Puerto Rican communities in New York City from the late 1950's to the present. Through the analysis of literary texts (narrative, poetry, theater) and films, students are encouraged to reflect on the forging of transnational identities and other issues (race, cultural identity, gender and masculinities) related to these two Caribbean diasporic communities in the U.S., and on the politics of their representation within the American cultural economy. **CC:** HUL, HUM, LCC **ISP:** AFR, AMS, FLM, LAS

II. Film: Disciplines, Theory, Criticism

ANT 240 - Technology, Culture & Society

Course Units: 1.0 Examines the role of technology in cultural change and the role of culture in technological change. Particular attention will be given to: the Internet and other so-called "virtual community" formations, graphic design and other media, "reality" TV, cross-cultural advertising, and popular music. **CC:** LCC, SOCS **ISP:** FLM, GSWS, STS

EGL 286 - Transnational Literature, Film, and Theory

Course Units: 1.0 While modern colonialism dating back to the 18th century brought the entire globe into contact, the nation-state remained the relevant unit of culture. Unprecedented levels of migration and technological development in the past century, however, have made it impossible to ignore the fact that we are now living in a thoroughly transnational world-a new world order whose contours we yet barely grasp. How do social identity formations shift when nation-state boundaries are challenged? What sorts of new ethical dilemmas and self-other relations are engendered? Is anti-colonialism, staged as it was in the theater of national liberation, de-fanged or enabled by transnationalism? What new aesthetic forms and modes are generated by transnationalism; and how do cosmopolitans, exiles, diasporics, hybrids, and long-distance nationalists affect the field of culture? These are among the questions we will examine over the course of the term through the complementary lenses of film, literature, and theory. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of instructor. **CC:** HUL, HUM, WAC **ISP:** FLM

EGL 287 - Gender and Sexuality in Film

Course Units: 1.0 This course examines the intersecting roles played by gender and sexuality in our media, with particular emphasis placed on film and video. Over the course of the semester, we will investigate the ways in which various media texts transmit and construct gender and sexuality and how viewers interpret and integrate these representations into their daily lives. As we analyze films by such directors as Alfred Hitchcock, Douglas Sirk, Julie Dash, Trinh T. Minh-ha, and Jonathan Caouette we will explore the ways in which conceptions of gender and sexuality are facilitated and constrained by legal, medical, and ethical discourses that emerge from specific historical and geographic contexts. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of instructor. **CC:** HUM, WAC **ISP:** FLM, GSW

EGL 288 - Film as Fictive Art

Course Units: 1.0 What exactly does the designation "indie" mean when both filmmakers who disseminate their work online and specialized divisions within Hollywood studios claim this term as their own? In this course we will trace the development of the independent cinema from the late 1960s when first-time directors challenged Hollywood norms to create the New American Cinema, through its heyday the 1990s, into the present era-where many argue it has become thoroughly institutionalized. In examining the enormously flexible characterization "independent" we will draw on of a variety of code systems (cultural, artistic, narrative, cinematic, and intertextual) to analyze the work of such directors as George Romero, Julie Dash, Todd Haynes, Mira Nair, Jim Jarmusch, Spike Lee, and Kelly Reichardt. **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUL, HUM, WAC, GCAD, GLIT, GSPE **ISP:** AMS, FLM

EGL 289 - The Essay Film Workshop

Course Units: 1.0 Deriving its meaning from the French *essayer*: to try; to attempt, the essay film is an experiment in form and expression. Weaving together elements of fiction and documentary, the essay film foregrounds the subjectivity of the filmmaker and engages the viewer as participant and collaborator. Relying heavily on montage, the essay film often employs found footage as well as cinema verité techniques-where the camera acts as quasi-therapist, eliciting new performances and confessions. In an approach combining theory and practice, we will explore the many aspects of the essay film genre. Foundational readings by Michel de Montaigne, Georg Lukács, and Phillip Lopate will be paired with visual essay by Issac Julian, Chantal Akerman, Mona Hatoum, and Marlon Riggs among others. Experimenting with form and method, students will produce weekly writings and visual exercises and an extended essay film. **Cross-Listed:** FLM 289 **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, FLM

EGL 290 - Studies in Film Genre/Style: Film Noir

Course Units: 1.0

Over the course of the term, we will analyze the history and aesthetics of genre categories and their revisions with respect to specific codes and characteristics, audience expectations, technological developments, and publicity practices. In our investigation of the question of genre, we will engage such key concepts in film theory as authorship, narrative, mise-en-scène, suture, spectatorship, and the gaze. As we seek to understand why genres gain popularity in certain historical moments and the ways in which genres are revised, we will employ a variety of critical tools, drawn from genre theory, critical race studies, environmental studies, and theories of gender and sexuality. Finally, we will ask whether genre studies as a critical approach is keeping pace with the many new developments shaping cinematic form.

Film Noir

This term, our investigation of genre will focus specifically on film noir. We will study the genre's emergence from German Expressionism, pre-code gangster movies, screwball comedy, and hard-boiled detective fiction and consider the historical factors that led to the burgeoning of film noir in the 1940s and 50s. In addition to the standard characters (detective, femme fatal, gangsters, "deviants"), we will analyze filmic styles (low-key lighting, voice-over narration, etc.) and themes of alienation, corruption and existential drift that characterize the genre. From its origins in post-World

War II America, we will explore film noir's radical revisions and geographic relocations as it is taken up in such places as France, Hong Kong, Korea, and Mexico. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUM, WAC, JLIT, JSPE **ISP:** AMS, FLM

FRN 402 - Sex Lives and Videotape: Casting Sexuality in French and Francophone Film

Course Units: 1.0 Analysis and critique of films whose focus is the "sexual orientation" of its characters. Films may include La Cage aux folles, Les Diaboliques, French Twist, Sitcom, Ma Vie en rose, Woubi Cheri. Theoretical and critical works by authors such as Michel Foucault, Monique Wittig, Simone de Beauvoir, Susan Hayward, Laura Mulvey, Sigmund Freud, and Kate Bornstein will inform our study of these films. Readings in both French and English. All films subtitled. **CC:** LCCF, HUM **ISP:** FLM, GSWS

HST 331 - Representing America: United States History in Film

Course Units: 1.0 This course compares the representation of American history in Hollywood film with the reconstruction of our past by scholars. Each week students will critically examine the historically-based films of D. W. Griffith, John Ford, Frank Capra, and others. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS, WAC **ISP:** AMS, FLM

MLT 287 - Social Realism and Cinema in Latin America

Course Units: 1.0 This course examines different styles of documentary and realist film making from Latin America. It looks critically and with a "film-eye" at the aesthetic and socio-political meanings of conventional and experimental films dealing with social reality and its representation. We will analyze a selective, but historically contextualized and engaging, collection of films that include, among others, Luis Buñuel's Los Olvidados (1950), Hector Babenco's Pixote (1981), and Fernando Meirelles' City of God (2002). **CC:** HUM, LCC **ISP:** FLM, LAS

MLT 339 - The Holocaust in Film: Cinematic Treatments of Violence, Trauma and Memory

Course Units: 1.0 The course examines cinematic representations of the Holocaust in the films of German, German-Jewish, and other European filmmakers. Comparing and contrasting a variety of film genres and cinematic techniques, we explore fundamental questions about the relationships between art and history, representation and experience and memory and responsibility. By considering theoretical and historical readings as well, we situate the films within significant intellectual and historical contexts. **Cross-Listed:** GER 339 **CC:** HUM, LCC, WAC, JCHF, JLIT **ISP:** FLM

PSC 340 - Politics and Film

Course Units: 1.0 This course explores political themes through the rigorous viewing of feature films and documentaries from the United States and abroad. Films present differing perspectives on the subject. Themes include war, revolution, counter-revolution, role of the individual in social conflict, and US intervention in foreign lands. Class requires critical analysis of the films, supplementary readings, and six conceptual-analytical papers. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, FLM

PSC 364 - Law and Film

Course Units: 1.0 This course uses the medium of film as a springboard to introduce and explore concepts in legal theory, American legal culture, and the exercise of public and private power through the legal system. Specific topics of discussion include law as morality, higher versus positive law, law and gender, and the heroic lawyer mythology. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, WAC **ISP:** AMS, FLM, LAW

PSC 434 - Feminist Film

Course Units: 1.0 Using 10 films as our "texts" we will examine the role of women in society, the diversity of women's lives, the impact of gender roles in various cultural contexts, the possibility of alternative sexualities and ways of living, and whether we can say what constitutes a "feminist film." The course is focused on discussion of, and writing about, the films but includes analysis of feminist political theory and feminist film theory to provide tools for better interpretation. **CC:** SOCS **ISP:** AMS, FLM, GSWS

SPN 311 - Otherness and Citizenship in Contemporary Spanish Theater and Cinema

Course Units: 1.0 An introduction to the study of the dramatic and film genres through the analysis and discussion of contemporary works by Spanish playwrights and filmmaker. Theoretical readings and diverse critical approaches to theater and cinema frame the course around the portrayal of the Other (women, North African and Latin American immigrants, LGBTQ communities, Roma people, and the poor). The analysis of primary texts will center on how the authors/directors weave representations of difference into narratives of nationhood, while engaging in cultural and political debates about citizenship. The course also aims to familiarize students with Spanish visual culture and performance from "la Movida" (immediate post-Franco period) to the new millennium while nurturing the honing of linguistic skills. **Prerequisite(s):** Two 250-299 level courses or permission of the instructor. **CC:** LCCS, HUM, JCAD, JCHF, JLIT, JWOL, WAC **ISP:** FLM

SPN 415 - What Remains: Waste in Latin American Cinema, Literature, Media, and Art

Course Units: 1.0 This course examines the presence and impact of trash, disposed objects and life, and landfills/wastelands in the context of expiry, renewal, and globalization in Latin America. Borrowing from philosophy and urban sociology and anthropology, Latin American, cultural, media and cinema, and environmental studies, the course teases out the aesthetic, political, and economic aspects of "trash" as an intricate stockpile of modern, industrial, digital, and postindustrial traces of discarded and remnant history as well as a multifaceted symbolic index with particular trajectories and manifestations in Latin America contexts. The course will revisit cultish films like Amores Perros (Gonzalez Inarritu, 2000) and lesser known films like La sociedad del semaforo (Mendoza, 2010) and Buscando a Miguel (Fisher, 2006); examine Photography work by Manuel Alvarez Bravo, Miguel Río Branco, and Enrique Meinitides and conceptual art by Teresa Margolles and Doris Salcedo, among others; explore documentary and environmental work looking at waste, neoliberalism, and recovered and precarious life such as Sequia (Sanchez Macias, 2009), Cartoneros (Livon-Grosman, 2006),Lixo extraordinario (Walker, Jardim, Harly 2010), El tren blanco (Garcia, Perez Gimenez y Garcia, 2003), and Yasuni: dos segundos de vida (Leonardo Wild, 2010); and finally, analyze select literary and alternative initiatives related to "basura" (Ibargoyen, Bolanos, Restrepo, editorial Eloisa Cartonera, Spregelburd, among others). **Prerequisite(s):** Take two SPN 300 level courses. **CC:** LCCS, HUM **ISP:** FLM

SPN 433 - Latin American Colonial Crossroads at the Movies

Course Units: 1.0 This course explores critically filmic approaches to colonial Latin American literature and history. Its main objectives are to analyze films preoccupied with historical events and life in colonial times, to engage the filmic representation of the cultural, political, and religious encounters and tensions informing our desire to revisit contact among Amerindians, African slaves and Europeans, and to familiarize students with debates pertaining to

reconstructing the colonial past for contemporary consumption. **Prerequisite(s):** Two 300-level courses. **CC:** LCCS, HUM **ISP:** AFR, FLM, LAS

III. Film Technologies

ATH 117 - Fundamentals of Stage Lighting Design

Course Units: 1.0 This course seeks to introduce students to the world of stage lighting design and technology. Initial emphasis will be on electrical theory, photometrics and the wide variety of fixtures and control boards in use in the modern theater. The class will then progress to basic lighting theory and analysis of lighting techniques. In the final weeks, the class will actively participate in the design, hang, focus and programming of the lighting for a departmental production. **CC:** HUM **ISP:** FLM **Note:** Satisfies design requirements for Theater Majors and Minors.

AVA 120 - Photography 1 - Black and White Darkroom

Course Units: 1.0 Consider how many times a day you look at a photograph, take a photograph, send or post a photograph. In this course we will develop techniques in creating and reading one of our most prevalent means of communication, photography. Through a rigorous introduction to the techniques of analog film photography and the chemical black and white darkroom we will consider how photography as a medium presents a unique way of looking at the world. We will use these technical skills to develop poetic voices with which to present our own stories, perspectives, and ideas. This course has three main goals: to understand and demonstrate the techniques of analogue photography, to develop an artistic voice using photography, and to practice the synthesis of these techniques and ideas. Limited enrollment, by permission of instructor. **CC:** HUM **ISP:** FLM

AVA 160 - Digital Art

Course Units: 1.0 This introductory course focuses on the fundamentals of using the computer as an art tool in the production of two-dimensional content. Topics covered include essentials of digital imaging, digital printing, and posting information to the Internet. Class lectures and hands-on studio will incorporate technique demonstrations, discussions, technical exploration, aesthetic inquiry and historical information relevant to computer multimedia, hypermedia and telecommunications. Students are encouraged to pursue areas of interest and explore new ideas throughout the course. Outside work required. No previous experience necessary. **CC:** HUM **ISP:** FLM

AVA 220 - Photography 2 - Intermediate Photography

Course Units: 1.0 Building on the technical skills developed in Photography I this course begins with advanced film photography and progresses through an introduction to digital photography with a focus on the development of a long term, in depth photography project. In the traditional darkroom we will explore low light film photography using high ISO film and on camera flash concluding the analogue portion of the course with an introduction to color film. Moving to the digital darkroom we will become acquainted with DSLR cameras and digital workflows using the Adobe Creative Suite and concluding in the production of inkjet prints. Throughout these technical explorations we will explore contemporary and canonical examples of long term projects spending much of the term developing our own in-depth bodies of work. **Prerequisite(s):** AVA 120; limited enrollment, by permission of the instructor. **CC:** HUM **ISP:** FLM

AVA 262 - Real and Recorded Time - 4D Art

Course Units: 1.0 This course will serve as an introduction to the basic concepts of four-dimensional art or time-based artwork, using a variety of processes and media. Students explore concepts in animation techniques, video and audio production, editing, interactivity, installation, and documentation. Class lectures and hands-on studio time will incorporate technique demonstrations, screenings, readings, discussions, technical exploration, aesthetic inquiry and

historical information relevant to the course. Outside work is required. **Prerequisite(s):** Any Studio Art course or permission of instructor. **CC:** HUM **ISP:** FLM

AVA 320 - Photography 3: Advanced Projects in Photography

Course Units: 1.0 This course has four main goals: to understand and demonstrate advanced techniques of analogue and digital photography, to understand and demonstrate advanced techniques of photographic printing, to hone and further develop an artistic voice using photography, and to practice the synthesis of these techniques and ideas to create a robust portfolio project. Students will work on self directed long term projects culminating in the production of a finely honed and printed portfolio and digital presentation of photgraphs. **Prerequisite(s):** Photography II or permission of instructor; limited enrollment. Digital camera required. **CC:** HUM **ISP:** FLM

AVA 363 - 3D Computer Modeling

Course Units: 1.0 This course will introduce students into the world of three-dimensional computer graphics. Through this hands-on-course, students will learn how to use 3D software to realize ideas in sculpture, virtual environments, 3D modeling, installation, and rapid prototyping. Class lectures and hands-on studio time will incorporate technique demonstrations, discussions, technical exploration, aesthetic inquiry and historical information relevant to the course. Software covered: Cinema 4D, Poser, and Adobe After Effects. Outside work required. **Prerequisite(s):** AVA 160 or AVA 320 or permission of instructor. **CC:** HUM **ISP:** FLM

CSC 385 - Computer Graphics

Course Units: 1.0 Implementation and use of algorithms for computer graphics. Rendering and representation of 3D objects. Lighting, shading and texture mapping surfaces of 3D objects. Programming interactive graphics applications. Constructing 3D models of real-world objects. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197 **ISP:** FLM

- EGL 296 - Screenwriting Workshop

ECE 241 - Discrete Systems

Course Units: 1.0 Discrete signals and systems; classification and properties of systems; difference equations; Z-transform; Fourier series, Fourier transforms, the DFT and FFT; filters and filter design; A/D and D/A converters; applications to audio signal processing. Includes a weekly lab. **Cross-Listed:** BME 241 **Prerequisite(s):** ECE 240 or BME 240 **Corequisite(s):** ECE 241L **CC:** WAC **ISP:** FLM

ECE 347 - Image Processing

Course Units: 1.0 The course covers the basic operations performed on digital images. These include digitization, image enhancement and restoration, color image processing, and image compression using the discrete cosine transform and wavelets. **Prerequisite(s):** ECE 241 or BME 241 **ISP:** FLM

FLM 201 - Documentary Filmmaking

Course Units: 1.0 For beginners to advanced, Documentary Filmmaking presents the foundations of non-fiction filmmaking: from camera and equipment use to interviewing techniques and storytelling strategies. While creating a short documentary on a subject of the student's choosing, participants will come to understand the interface between them and world around them through the filter of the camera. Students can work in a variety of documentary styles which are explained in class. These forms include the poetic, expository, observational and participatory form. The

skills learned in this class are valuable across many disciplines and jobs which involve interpersonal relationships, media skills, research and working with subjects. **CC:** HUM **ISP:** FLM

FLM 202 - Digital Filmmaking

Course Units: 1.0 For beginners to advanced, Digital Filmmaking presents the foundations of fiction filmmaking: from lighting and camera work to editing, sound and working on set. In the first part of the course, students recreate scenes from well-known films. In the second part, students script and shoot their own short films. This class is appropriate for filmmaking newbies as well as for those who wish to deepen their understanding and practice of the craft. The skills learned in this class will help students gain a foundation in media skills increasingly in demand across many majors and in the job market. **CC:** HUM **ISP:** FLM

FLM 303 - Cinematic Montage

Course Units: 1.0 For beginners to advanced, Cinematic Montage explores the inner workings of fiction and non-fiction films. What are the elements that create a film's style or genre? How is rhythm employed in filming and editing? What are the techniques Hollywood uses to get, as they put it, "butts in seats?" In this class we deconstruct and reconstruct the mechanics of the filmmaking craft as students practice filmmaking elements in fun, weekly assignments. No prior experience needed. This class is helpful to develop analytical and media-critical tools useful across many majors and increasingly important in the media-connected job market. The course counts toward the 6-course minor in Film Studies. **CC:** HUM

IV. Film Project or Internship

FLM 490 - Film Project or Internship 1

Course Units: 1.0 Film Studies Independent Study. May take form of independent film project. **Prerequisite(s):** At least two other film courses from the lists above and project proposal approved by the Program Directors. Also, upon consultation with Program Directors, a Film Studies-related internship may be arranged for credit toward the minor. **ISP:** FLM

FLM 491 - Film Project or Internship 2

Course Units: 1.0 Film Studies Independent Study. May take form of independent film project. **Prerequisite(s):** At least two other film courses from the lists above and project proposal approved by the Program Directors. Also, upon consultation with Program Directors, a Film Studies-related internship may be arranged for credit toward the minor. **ISP:** FLM

FLM 492 - Film Project or Internship 3

Course Units: 1.0 Film Studies Independent Study. May take form of independent film project. **Prerequisite(s):** At least two other film courses from the lists above and project proposal approved by the Program Directors. Also, upon consultation with Program Directors, a Film Studies-related internship may be arranged for credit toward the minor. **ISP:** FLM

Gender, Sexuality, & Women's Studies

Director: Professor Erika Nelson Mukherjee (Modern Languages & Literatures)
Faculty: Professors C. Batson (Modern Languages & Literatures), C. Bracken (English), A. Burkett (English), J.

Cramsie (History), M. Ferry (Modern Languages & Literatures), W. Garcia (Modern Languages & Literatures), M. Goldner (Sociology),D. Hill Butler (Sociology), S. Leavitt (Anthropology), L. Marso (Political Science), J. Matsue (Music), Z. Oxley (Political Science), S. Raucci (Classics), M.F. Sener (Economics), G. Seri (Political Science), J. Smith (English), P. Wareh (English); Associate Professors K. Aslakson (History), L. Cox (Visual Arts), A. Foroughi (History), T. Gazzarri (Classics), J. Lewin (English), K. Lynes (English), S. McAuliffe (English), E. Nelson Mukherjee (Modern Languages & Literatures), L. Nemett (Visual Arts), D. Ogawa (Visual Arts), K. Scheiter (Philosophy), B.K. Tuon (English), S. Mueller (Modern Language and Literature) J. Troxell (English), D. Venning (Theater & Dance/English); Assistant Professors A. Dang (Economics), M. Cruz, D. Friedell (Philosophy), M. Guerrant (Psychology/GSWS), E. McGrath (History); Senior Lecturer M. Osuna (Modern Languages & Literatures)

Gender, Sexuality, and Women's Studies (GSWS) is an interdisciplinary program that includes a wide variety of courses offered in arts and humanities and social sciences. Offering a critical perspective that places gender at the center of analysis, GSWS reexamines traditional beliefs, supports new research methods, explores feminist and queer theories, and enables students to better understand the societal positions and global processes affecting all genders throughout the world. GSWS courses probe the way cultures construct concepts of gender and sexuality, introducing students to differences of class, race, ethnicity, and life cycle in a range of societies. Students are encouraged to become aware of intersectionality and unexamined assumptions about sexual and gender differences.

Gender, Sexuality, and Women's Studies (ID), B.A.

Requirements for the Interdepartmental Major:

Eight courses, including GSW 100 or GSW 101 [if a student takes both Introductory courses, one course will count toward a GSWS elective], GSW 495, five remaining courses with GSW designation from at least two divisions, and a senior thesis on a subject that examines gender, sexuality, and women, and/or feminism. One term of the senior thesis counts towards the GSW major. Completing GSW 100 before the student's senior year is required, or by permission of the program director. A one-term internship is recommended (see major requirements). Students should confer with the program director in designing and fulfilling their requirements.

Gender, Sexuality, and Women's Studies Approved Courses

Division 1: Arts and Humanities

Art History

AAH 223 - The Nude

Course Units: 1.0 The nude in its art historical and social contexts. Traditionally considered shorthand for abstract concepts such as "truth" or "beauty," the nude is in fact a powerful index to ideas about gender, power, and sexuality in any of the historical periods which produced it. Drawing on recent scholarship, we will examine works produced in Ancient Greece, the Renaissance, and the Modern Period in social and historical context, and consider ways in which the human body has been both a stylistic vehicle for artistic expression and a social tool for constructing ideas of masculinity and femininity. **CC:** LCC, HUM **ISP:** GSW

AAH 360 - Seminar: Visual Culture, Race and Gender

Course Units: 1.0 A lecture and discussion-based course concerned with how constructions of race and sexual differentiation are played out across art history and visual culture, focusing on the visual arts of Western Europe and the United States. The first half of the course investigates the constructs of gender and race from antiquity to the middle

of the 20th century as expressed in art and visual culture. The second half of the course is a close study of female artists of color living and working in the United States, grouped as African- American, Latina/Chicana, Asian and Middle Eastern and Multi-ethnic. **CC:** LCC, HUM, JCAD, JCHF **ISP:** AFR, AMS, GSWS, LAS

Classics

CLS 146 - Sex and Gender in Classical Antiquity

Course Units: 1.0 The representations and realities of sexuality and gender in classical Greece and Rome. Primary focus on how ancient writers formulated the categories of "feminine" and "masculine" in discussions of ethics, nationality, education, politics, and science. This will enable students to think critically about some of the central literary works in the Western tradition through the socially charged categories of gender. Attention will also be directed to how literary representations compare with the actual social experience of ancient women, insofar as we may reconstruct it through the reading of literary, archaeological, and artistic evidence in social, familial, legal, and religious contexts. **CC:** JCHF, JLIT, JSPE, HUL, HUM **ISP:** GSW

CLS 147 - Women in Ancient Rome

Course Units: 1 This course will address the lives of women in ancient Rome. We will examine the themes of labor, dress, family, religion, law, and medicine, among others, in a variety of sources (literary, epigraphic, visual). We will study both the lived realities of Roman women and how the latter were perceived and represented in ancient society. **CC:** HUM, LCC, JCHF **ISP:** GSW

English

EGL 193 - Confronting the Canon: Confronting the Hero's Journey

Course Units: 1

This course will challenge traditional renderings of various heroic tales through the double-edged lens of queer and feminist theory. Our discussions will draw from various scenes and film screenings of classic stories that may include *The Epic of Gilgamesh,* the *Bhagavad Gita,* Ovid's *Metamorphoses*, Aeschylus's trilogy *The Oresteia*, Homer's *Odyssey*, Virgil's *Aeneid*, the story of Jesus, *Beowulf*, and several fairy tales, as well as slightly more contemporary classics such as Herman Hesse's *Siddhartha, the Lord of the Rings, Star Wars, The Matrix, Harry Potter,* and *The Wizard of Oz*, among others. "Confronting the Canon" courses are cornerstones of the new English curriculum and required beginning with majors/minors in the class of 2025. Also counts toward GSW. 100-level courses are open to all students. **CC:** HUL, HUM, JCHF, JLIT, JSPE, WAC **ISP:** GSW

EGL 194 - Confronting the Canon: Confronting Dido's Many Faces

Course Units: 1 This course introduces students to some of the foundational questions raised when interrogating & reconfiguring what has long been considered the traditional, Western literary canon. English classes, in many different educational settings, have an extensive history of perpetuating the "greatness" of texts by white, heterosexual, male authors, often at the expense of those works written by women, writers of color, & queer writers, among other diverse groups. "The Many Faces of Dido" will challenge traditional interpretations of Dido, portrayed in classical works of fiction, poetry, drama, & art. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** GSWS

EGL 202 - Amazons, Saints and Scholars: Women's Writing in the Middle Ages and Renaissance

Course Units: 1.0 This course explores the medieval and early modern female writers of England and France. We will ask: how did women respond in writing to the male-defined literary traditions and conventions of these eras? The course also provides an introduction to some of the major questions and works of feminist literary criticism, including: Why should we read the works of women? What aesthetic standards should we apply when discussing their works? Is there a difference between "masculine" and "feminine" writing? We will focus on six female writers: Marie de France, Christine de Pizan, Elizabeth Carey, Isabella Whitney, Amelia Lanyer, and Mary Sidney. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 206 - Gender in Renaissance Literature

Course Units: 1.0 This course explores English Renaissance texts from a variety of genres with an eye to the gender norms that they both created and critiqued. On the one hand, the early modern period offered very distinct roles for men and women. Men were expected to abide by a code of honor that emphasized bravery and action, while women were expected to be chaste, silent, and obedient. On the other hand, there were countless examples of these norms being challenged. Reading plays, poems, speeches, and conduct manuals, we will consider the complexity of their presentations of gender. **Prerequisite(s):** Any 100 level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT **ISP:** GSWS

EGL 223 - Jane Austen

Course Units: 1.0 Jane Austen has achieved what few other literary authors can boast: membership in "the canon" of "great authors" and an intensely devoted, energetic modern fan base complete with cosplay, fan fiction, pilgrimages, and a never-ending series of visual adaptations. Students will read Jane Austen's work in chronological order, explore some late 18th and early 19th century contexts (biographical, philosophical, literary, cultural, historical), become familiar with some of the central, current, and ongoing scholarly debates about Austen, and discuss the value of, and consider the insights revealed by, some modern adaptations of Austen's work. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 224 - 19th-Century Novel

Course Units: 1.0 This course on the 19th-century novel is an experiment in slow reading. According to David Mikics, "Reading better means reading more slowly. There is a quiet movement afoot on behalf of slowness: slow cooking, slow thinking, and yes, slow reading. In reaction against the breathless pace of our computer-driven world, writers on social trends have begun to extol the virtues of a more meditative, involved approach to many parts of our lives, and reading is no exception" (1). Together, we will spend the term slowly reading and rereading one substantial Victorian novel, focusing on slow reading as both experience and methodology. In addition to the novel, we will read around it: digging into primary and secondary source material to build a complete portrait of the novel itself, the cultural landscape that surrounded it, and its critical and artistic legacy. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 230 - Seduction in Early American Republic

Course Units: 1.0 In her seminal study, *Revolution and the Word*: *The Rise of the Novel in America*, Cathy N. Davidson argues that "literature is not simply words upon a page but a complex social, political, and material process of cultural production" (viii). The eighteenth-century sentimental novel serves to highlight a moment in history lodged among judgments, anxieties and controversies about the direction the newly-formed American Republic would take at the end of the Revolution. Embedded within these narratives are questions about both men's and women's power and authority in the public and private spheres, the negation of the female self, the seductive function of romance and courtship, and the perception of women's bodies as moral, social, and biologic commodities. This course seeks to explore disjunctions between the sentimental structure of the early American novel and its contradictory attitudes toward liberty and self-

expression. Through the lens of queer theory, affect theory, and new materialism, students will examine how seduction, homoerotica, and cross-dressing both reinforce and subvert American values and ideals that are distinct from European standards of morality. The readings will also consider how the cult of "true womanhood," prominent during the first few decades of the nineteenth century, suppressed pleas for women's equality. How do the texts under consideration help to define the new nation, its citizens, and boundaries? In what ways do these texts consolidate nationhood through the formation of a national literature and the narrative structure of a national history, culture, and consciousness? Do these novels construct, conserve, or undermine American cultural institutions? **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, GSWS

EGL 233 - 18-19th Century Early Literature of African Diaspora

Course Units: 1.0 This introductory survey course will trace African American movement towards literary and aesthetic mastery beginning with what Henry Louis Gates calls "oral writing." Readings begin with the first known written poems and progress from slave narratives and autobiography to essays and fiction. Authors include Phillis Wheatley, Harriet Jacobs, Frances Ellen Watkins Harper, Solomon Northup, Charles Chesnutt, W.E.B. Du Bois, among others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, WAC, JCHF, JLIT **ISP:** AFR, AMS, GSWS

EGL 236 - Trans-Atlantic Realism and Naturalism

Course Units: 1.0 Realism and naturalism were aesthetic movements that emerged in American fiction between approximately 1865 and 1925. This course examines these two literary movements to show how writers of this era explored the trauma created by war (the Civil War and WWI), the moral consequences of freedom and sexual awareness, rapid urbanization and the Great Northern migration, inconsistencies between wealth and poverty, and innovative discoveries in science and technology. The purpose of this course, then, is to investigate how the authors of this period practiced their art both collectively and individually and the ways in which American social life informed the ideologies of realism and naturalism. Possible writers we will study include William Dean Howells, Stephen Crane, Frank Norris, Theodore Dreiser, Kate Chopin, Mary Wilkins Freeman, Mark Twain, Edith Wharton, Henry James, and Paul Laurence Dunbar. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, GSW

EGL 244 - The Contemporary British Imagination

Course Units: 1.0 This course will examine contemporary British literary works. We will be reading closely, carefully, and critically about gender, sexuality, class, race, love, trauma, narrative, style, history, and more. This course will familiarize students with a sampling of the (often experimental) literature that the global Anglophone world has produced fairly recently; our selections will range from experimental short stories to books-turned-films to so-called "weird fiction," in order to address the following major questions: how does the contemporary British literary imagination develop? And, what, exactly, does it develop into? **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** GSWS

EGL 250 - The Beats and Contemporary Culture

Course Units: 1.0 An examination of the writers of the Beat Generation (including Allen Ginsberg, Jack Kerouac, Gary Snyder, Edward Sanders) and of their lasting influence on American popular culture. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, GLIT, GCAD **ISP:** AMS, GSWS, REE

EGL 253 - Narratives of Haunting in US Ethnic Literature

Course Units: 1.0 This course examines the theme of haunting in contemporary US ethnic literature. With this theme in mind, we will investigate the following questions throughout the trimester: Why is haunting such a prevalent theme in ethnic writing? What do we mean when we say that a text is haunted? What are the causes of haunting? What is possession? What are some ways to dispossess or exorcise ghosts? What are the functions of ghosts? Is there such a thing as a good haunting? What are their messages to us? How do we listen to ghosts? Authors include Lan Cao, Nora Okja Keller, Maxine Hong Kingston, Cynthia Ozick, Toni Morrison, Sandra Cisneros, and Leslie Marmon Silko. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM, JCHF, JLIT **ISP:** AMS, GSW

EGL 257 - Irish American Literature: Race, Gender, Sexuality

Course Units: 1.0 **(Fall: Bracken)** This course will provide an introduction to Irish American literature from the 19th century to the present day, looking at a number of issues. Specific attention will be paid to constructions of race, gender, and sexuality and the texts examine here will be explored with questions relation to these in mind. Throughout the course, we will consider race relations in 19th and 20th century US culture, new scholarship on the Black and Green Atlantic and trace the problematics of Irish America's (self) construction of whiteness. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUM, HUL, WAC **ISP:** GSW

EGL 258 - Changing Ireland

Course Units: 1.0 This course will be looking at the changing nature of Irish society since the economic boom of Celtic Tiger Ireland in the 1990's. EU membership, US investment and the effects of global internationalism have brought about radical culture transformations in the country which in turn are altering conventional meanings of Irishness and Irish identity. We will be looking at representations of this changing Ireland in literature and film, paying attention to issues such as new technologies, post-feminism, sexualities, race and ethnicity. Texts will include Martin McDonagh's *In Bruges*, Anne Enright's novel *The Wig My Father Wore*, and the poetry of Leanne O'Sullivan. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM **ISP:** FLM, GSWS

EGL 259 - Irish Literature and Film

Course Units: 1.0 The aim of this course is to introduce you to the field of Irish Studies, examining how issues relating to language, identity and nationhood are intimately connected in Irish literature and film. In this course we will be studying Irish literary texts from the beginning of the 19th century to the late 20th century, examined alongside a selection of contemporary films. This course will ask you to consider the ways in which cultural concerns of the Irish past continue to haunt the landscape of the present day, paying attention to issues of gender, class, race and sexuality. Texts will include Lady Morgan's *Wild Irish Girl*, Bram Stoker's *Dracula*, Samuel Beckett's *Waiting for Godot* and Neil Jordan's film *Michael Collins*. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, LCC, HUM **ISP:** FLM, GSWS

EGL 261 - Modernism and Modernity

Course Units: 1.0 This course examines British fiction from the early twentieth-century, a period often referred to as the "modernist" era. The moderns experimented with new, different, and exciting ways of writing that perplexed many readers, yet such changes have come to be seen as important innovations in literary style. In addition to engaging with questions of form and style, the moderns were also interested in subjects that were previously viewed as taboo, questionable, and, as such, often unspeakable. These topics included trauma, the lasting effects of war, sexual experimentation, adultery, insanity, and newly carved out gender and familial roles. Throughout our term together, we will critically consider, discuss, and write about the dynamic between the content of modernist writing and its innovative style and form. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** GSWS

EGL 262 - Global Modernisms

Course Units: 1.0

While traditionally modernism has been considered a largely European and North American affair, in recent years scholars have sought to contest and expand this canon. New research has shown that modernism existed all over the world, from Africa and Latin America, to the South Pacific and East Asia, and on all continents in between. This course introduces students to a new globally expanded understanding of modernism, while asking them to actively contribute to the ongoing expansion of the canon. We will work with new scholarship and archival materials, in order to better understand what happens to modernism as it spreads around the world.
Writers may include African writers such as Léopold Sédar Senghor, and Wole Soyinka; Caribbean writers Claude McKay and Aimé Césaire; Japanese poets, Hirato Renkichi and Chika Sagawa; Chinese writers such as Lu Xun and Eileen Zhang; Indian writers from Tagore and the Indian Progressive Writers Association to the 1960s avant-gardes; and Turkish modernists including Ahmet Hamdi Tanpınar and the Garip poets.

Students will have the opportunity to work with texts in any languages they may read, or to work exclusively in English (including in translation). By exploring literary criticism on modernism in its historical and global contexts, students will gain an understanding of major debates which have shaped modernist studies across the twentieth century including New Criticism, feminist studies, postcolonial studies, as well as more recent debates on the global turn including weak theory and "bad" modernisms. Students will also improve their writing and independent research skills through an anthology project that invites them to contribute to the ongoing canonization of global modernist texts through producing scholarly annotations, introductions, and digital editing. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, LCC, WAC, GLIT, GCHF, GSPE **ISP:** AIS

EGL 263 - Literature and Sexuality

Course Units: 1.0 By examining literary and cultural representations, this course both interrogates the politics and social dynamics of various sexual identities and subjectivities and examines complex representations of both gender and sexuality. This course also focuses on the literary study of important straight, gay, lesbian, queer, bisexual, and transgender writers within their evolving social, historical, and cultural contexts over the last few centuries. We will discuss some of the major critical debates both in literary studies and in gender and sexuality studies, asking and attempting to answer the following questions: How is sexuality represented in literature? How has the relationship between literature and sexuality evolved over time? Who creates the discourses on sexualized bodies and identities? How can we understand the relationship between lived experience and literary/cultural representations? What might be queer about literature? What makes a narrative queer? **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** GSW

EGL 266 - Black Women Writers

Course Units: 1.0 This course provides an introduction to the major themes and concerns of twentieth- and twenty-first century African American women writers. We begin in the 18th century and move quickly to the 20th and 21st. We will examine the ways in which black womanhood is characterized through intersecting categories of race, gender, class, sexuality, and empire. We will explore how selected authors wrestle with stereotypical images of African American women, examine the connections between black womanhood, community, and empire, and discuss the benefits and limitations of the concept of "black women's writing." Possible writers include Frances Harper, Maria Stewart, Anne Spencer, Zora Neale Hurston, Gwendolyn Brooks, Toni Morrison, Audre Lorde, Gloria Naylor, Octavia Butler, and others. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** LCC, HUL, HUM **ISP:** AFR, AMS, GSW

EGL 267 - The Virginia Woolf

Course Units: 1 Virginia Woolf is, quite frankly, one of the most significant writers transnationally and transhistorically. Aside from her acclaimed, now often canonical novels, Woolf wrote short stories and essays; indeed, her letters and diaries, in addition, have become a core part of modernist literary history. This class examines Woolf and much, though notably not all, of her work within their social, cultural, and historical contexts. By tracing the evolution of Woolf's work, we will interrogate her stylistic innovations, shifting political ideologies, remarkable social circles, and complex life. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUM, HUL, WAC **ISP:** GSW

EGL 268 - Staging Black Feminisms

Course Units: 1.0 This course considers the feminist and anti-racist practices of Black female dramatists, placing their plays within their cultural contexts. We will examine the ways in which these works construct Black feminist histories, genealogies, and cultures while challenging racial and sexual hierarchies in both American society and artistic canons. Each week, students will read a landmark dramatic text by a Black female playwright as well as seminal sociological texts and scholarly studies that contextualize the work within broader artistic and social movements. Through discussions, field trips including attendance at theatrical performances and other cultural events, reading responses, and a final presentation based on individual research, students will hone their thinking about the development of Black female voices in American dramatic literature and society. **Cross-Listed:** SOC 209 and ATH 248 **Prerequisite(s):** One 100-level English ourse or a score of 5 on the AP English Language or Literature and Composition test. **CC:** SOCS, HUL, HUM, JCAD, JCHF, JLIT, JSPE **ISP:** AFR, GSW

EGL 269 - New Women around the World

Course Units: 1.0 The idea of the New Woman emerged around the world in the first half of the twentieth century. From Beijing to Berlin, Tokyo to Istanbul, women became visible as chorus girls, urban migrants, starlets, citizens, freedom fighters, consumers, and leisure seekers in new public spaces. This class will examine how literature represented and responded to the global phenomenon of the New Woman, tracing how various national, racial, and colonial contexts gave rise to distinct iterations of the New Woman and examining the linkages among the many geographical and political regions in which she appeared. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** JLIT, JCHF, WAC **ISP:** AFR, AIS, AMS, GSWS

EGL 274 - Uncanny Texts: Literature and Psychoanalysis

Course Units: 1.0 By interrogating literary, cultural, and psychoanalytical texts, this course examines the relationship between literature and psychoanalysis; the two have been in close conversation since the early theoretical developments that began to define psychoanalysis. From Freud's use of Hamlet and The Sandman as key cornerstones of his own theories to the way that J.K. Rowling's Harry Potter and the Sorcerer's Stone illustrates Jacques Lacan's notion of the Mirror Stage, literature and psychoanalysis have been dialogically and dynamically intimate bedfellows. During our term, we will look at psychoanalytical writings by Sigmund Freud, Jacques Lacan, and others in conjunction with transhistorical literary and cultural texts. We will examine specific psychoanalytical concepts like the unconscious, desire, sublimation, shame, the uncanny, the death drive, the primal horde, infantile sexuality, and mourning and melancholia. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** GSWS

EGL 276 - Literature of the Manor House

Course Units: 1.0 In this course we will investigate the rich and complex history of the genre of English manor house fiction. Focusing on texts ranging from Jane Austen's *Northanger Abbey* and E. M. Forster's *Howards End* to Kazuo Ishiguro's *The Remains of the Day*, Sarah Waters' *The Little Stranger*, and Ian McEwan's *Atonement*, we will explore issues of gender, sexuality, race, and especially class in both course readings and class discussions. Furthermore, we'll examine a number of filmic representations of British country house life, including Robert Altman's *Gosford Park* and

Julian Fellowes' *Downton Abbey*. In addition to crafting course papers, students will have the option to research, create, and showcase their own multi-media projects exploring virtual manor homes via a range of freely downloadable programs and platforms. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD, JLIT **ISP:** GSW, STS

EGL 282 - The Theory of Things: Objects, Emotions, Ideas

Course Units: 1.0 Everybody wants things, needs things, likes things, loves things! Things drive economies, incite wars, save lives; things help us communicate, work, play, move, talk, not talk, and so much more. The theory of things derives from humanity's interest in material culture studies and the connections that can be made between people and physical objects. But there is so much more to consider when discussing 'things,' such as those things that are not physical objects-love, hate, desire, thoughts, feelings, moods, pain, concepts, ideas, and words, just to name a few. In this course, students will discuss both material and immaterial 'things' and in particular how 'things' affect people, predominantly marginalized individuals and groups. *Course developed with support from the Byron A. Nichols Fellowship for Faculty Development. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JLIT, JCHF, JSPE **ISP:** GSW

EGL 287 - Gender and Sexuality in Film

Course Units: 1.0 This course examines the intersecting roles played by gender and sexuality in our media, with particular emphasis placed on film and video. Over the course of the semester, we will investigate the ways in which various media texts transmit and construct gender and sexuality and how viewers interpret and integrate these representations into their daily lives. As we analyze films by such directors as Alfred Hitchcock, Douglas Sirk, Julie Dash, Trinh T. Minh-ha, and Jonathan Caouette we will explore the ways in which conceptions of gender and sexuality are facilitated and constrained by legal, medical, and ethical discourses that emerge from specific historical and geographic contexts. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test, or permission of instructor. **CC:** HUM, WAC **ISP:** FLM, GSW

EGL 292 - Contemporary American Theater and Drama

Course Units: 1.0 This course examines trends and notable works visible today in the American theater. We will read plays that have had major successes on Broadway and American regional theaters, as well as study avant-garde works and theatrical and performance artists engaging with new forms and techniques in order to transform theatrical performance in our culture today. Through class discussions and assignments including student presentations, seeing professional theatrical performances, research projects, and critical essays, students will develop their ability to engage critically with theatrical art and artists of our present moment. **Cross-Listed:** ATH **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of the instructor. **CC:** HUM, WAC, JCAD, JCHF, JLIT **ISP:** AMS, GSW

Note: Junior and Senior Seminars: Not listed here because topics vary year to year, but in order to earn GSWS credit, the topic must cover GSWS topics, such as Queer Theory, Toni Morrison, Virginia Woolf, and others.

Modern Languages and Literatures

FRN 308 - Women on Top: Great Women Writers and Characters of French Narrative Fiction

Course Units: 1.0 French language women writers and the women they write about in their novels and short stories. Authors may include Claire de Duras, George Sand, Colette, Anne Hebert, Marguerite Yourcenar, Simone de Beauvoir, Marguerite Duras, Andree Chedid and Mariama Ba. Focus on cultural, historical and political positioning of both writers and their subjects. **CC:** HUL, LCCF, HUM **ISP:** GSWS

- FRN 317 - France after #metoo

FRN 318 - From Witchcraft to Hysteria

Course Units: 1 What is the common thread between witches, mystics, and hysterics? All these categories were used to describe women from different periods who did not fit into the roles that society had planned for them. Considered strange, queer, and dangerous, they were either cast out outside of cities or locked up in asylums. What about these women made the rest of society so scared of them? What did they mobilize within their practices and bodies that others could not bear to look at or understand? In this class, we will explore these questions through a series of fiction, films, and theoretical texts. **Prerequisite(s):** FRN 201 **CC:** LCC, HUM **ISP:** GSWS

FRN 400 - Whose Enlightenment?

Course Units: 1.0 Eighteenth-century France's philosophical tradition, focusing on debates over sex, race, class, education and revolution. Writers may include: Rousseau, Toussaint Louverture, Voltaire, Louise d'Epinay, Olympe de Gouges, Condorcet, Marie Antoinette, and Sade. **CC:** HUL, LCCF, HUM **ISP:** GSWS

FRN 402 - Sex Lives and Videotape: Casting Sexuality in French and Francophone Film

Course Units: 1.0 Analysis and critique of films whose focus is the "sexual orientation" of its characters. Films may include La Cage aux folles, Les Diaboliques, French Twist, Sitcom, Ma Vie en rose, Woubi Cheri. Theoretical and critical works by authors such as Michel Foucault, Monique Wittig, Simone de Beauvoir, Susan Hayward, Laura Mulvey, Sigmund Freud, and Kate Bornstein will inform our study of these films. Readings in both French and English. All films subtitled. **CC:** LCCF, HUM **ISP:** FLM, GSWS

GER 340 - Beyond Bedtime Stories: Retelling the Tales of the Brothers Grimm

Course Units: 1.0 This course Investigates the folk and fairy tales of the Brothers Grimm in literature and film, as well as in their cultural, historical, social and ideological contexts. Specific focus is on the "retelling" and "rewriting" of these tales -- both by the Brothers Grimm from older French and Italian tales and by Walt Disney and modern Hollywood -- in order to study the similarities and differences in narrative structures, themes, and layers of meaning, as well as the implications such retellings have on social and familial relationships, class structure, race relations, the phenomenon of nation building, the performance of gender and sexuality, orientalism and consumerism. **Cross-Listed:** MLT 239 **Prerequisite(s):** GER 201 or permission of the instructor if student seeking GER credit. **CC:** HUL, HUM, LCCG **ISP:** GSWS

GER 402 - German Film Studies

Course Units: 1.0 Needs to have completed GER 201 or the equivalent; contact any German professor for permission if you have experience in the language. **Prerequisite(s):** Any 300-level course or permission of the instructor. **CC:** HUM, LCCG, JWOL **ISP:** FLM, GSW

LAT 242 - Mythology in Latin Literature

Course Units: 1 This course will examine how ancient Roman authors wrote their own versions of ancient myths. We will read a selection of texts in Latin from Vergil's Georgics and Ovid's Fasti, Heroides, and Metamorphoses, among others. We will visit mythical landscapes, hear from gods and mortals, and review Latin grammar, too. As we read these texts, we will consider issues of power dynamics, status, and gender in Rome, as well as practice what it means to

engage in critical translation. **Prerequisite(s):** LAT 103 or any LAT course. **CC:** HUL, LCC, JCHF, JLIT, JWOL **ISP:** GSW

MLT 202 - Gender and Sexuality in Modern China

Course Units: 1.0 The course examines gender and sexuality in 20th-century China as a gateway to understanding the political, cultural, and economic realities of China today. We consider the figure of the "New Woman" during China's civil war and World War II, the androgynous ideal after the founding of the People's Republic, the "Successful Man" during China's economic reform, and the articulations of "Comrades" as part of local, national, and international conversations. Readings in English. All films subtitled. **CC:** HUL, LCC **ISP:** AIS, GSWS

MLT 203 - Asian American Film and Performance

Course Units: 1.0 An examination of topics in Asian American studies through film and performance by and about Asian Americans. Class material draws from independent filmmakers, theatrical and artistic performances, as well as theoretical and critical texts on culture and diversity, gender, the diaspora, and ethnicity. **CC:** HUM, LCC **ISP:** AIS, AMS, FLM, GSWS

MLT 239 - Beyond Bedtime Stories: Retelling the Tales of the Brothers Grimm

Course Units: 1.0 This course Investigates the folk and fairy tales of the Brothers Grimm in literature and film, as well as in their cultural, historical, social and ideological contexts. Specific focus is on the "retelling" and "rewriting" of these tales -- both by the Brothers Grimm from older French and Italian tales and by Walt Disney and modern Hollywood -- in order to study the similarities and differences in narrative structures, themes, and layers of meaning, as well as the implications such retellings have on social and familial relationships, class structure, race relations, the phenomenon of nation building, the performance of gender and sexuality, orientalism and consumerism. **Cross-Listed:** GER 340 **Prerequisite(s):** None for MLT. GER 201 or permission of the instructor if student seeking GER credit. **CC:** HUL, HUM **ISP:** GSWS

MLT 250 - Language, Identity, and Power in Japan

Course Units: 1.0 This course will focus on societal aspects which are represented in the characteristics of language. Discussions will include gender differences, formality, and communication strategies. This course will be taught in English and no prior Japanese language knowledge is required. **CC:** HUM, LCC **ISP:** AIS, GSWS

MLT 281 - Screening Identities in Latin American Cinema

Course Units: 1.0 A survey of the main trends in film production in Latin America since the 1950s. Readings and discussions on issues of film history, aesthetics, representation and reception will frame our critical reflection on the construction of various types identities in some of the national cinemas across Latin America. **CC:** HUM, LCC, JCAD, JCHF, WAC **ISP:** FLM, GSWS, LAS

MLT 286T - Gender and Identity in Contemporary Latin American Cinema

Course Units: 1.0 This course offers an interdisciplinary study of contemporary Latin American cinema focusing on issues of representation, reception and spectatorship, and the construction of (national, cultural, gender, and racial) identity. Besides the films, reviews and substantive readings will contribute to an examination of five main topics: 1) Constructions of Gender; 2) Representations of National Identity; 3) Race and Class; 4) Queer Images; and, 5) Imagining Marginality. All films studied in class will link two or more of these topics. **CC:** HUM, LCC **ISP:** FLM, GSWS, LAS

MLT 289 - Literature of the Mexican-American Border

Course Units: 1.0 This is a class in literature, film and essays from both sides of the Mexican-American border. This course is designed to give students an under-standing of the complexities of the history, culture and sense of identity of residents from both sides. The class will be discussion based and will focus on the close readings of novels, poems, short stories and plays. **CC:** HUL, HUM, LCC **ISP:** AMS, GSWS, LAS

SPN 251 - Stories of Power, Honor, and Love

Course Units: 1 *Chronicle of a Death Foretold*, by Gabriel Garcia Marquez, is at the core of "Stories about Power, Honor, and Love" The stores from this novel will hone your creative, analytical, and critical skills as you delve into the lives of characters who met or struggles to meet society's expectations. You will study cultural practices from the past and compare them with current cultural traditions to assess how cultural systems of oppression and privilege constrain or encourage human relationships when we have to exercise power, behave honorably, or choose who we love. The readings, class discussions, writing assignments, and creative digital projects will continue to develop your Spanish language skills. Classes and assignments will be in Spanish. **Prerequisite(s):** For students with 4 or more years of Spanish language study, with a score of 5+4+ or above on the AP exam or SPN 201. It is also suitable for students who have studies in a Spanish-speaking country or for heritage speakers that can read and write in Spanish. **CC:** HUL, HUM, LCC, JLIT, JWOL, WAC **ISP:** GSWS, LAS

SPN 307 - Melodrama in Latin American Culture

Course Units: 1 This course emphasizes melodrama as an invaluable aesthetic tool for understanding diverse cultural productions in Latin America and among the Latine communities in the United States. Through an exploration of literature, music, and audiovisual materials from the 19th century to the contemporary era, our class delves into how Latin
American and Latine individuals perceive their emotions and navigate the complex world that surrounds them-exploring themes such as love,identity, sex, marriage, womanhood, and masculinity. **Prerequisite(s):** Any two courses from SPN 250-299 or SPN 203 **CC:** LCC, HUL, JCHF, JWOL, WAC **ISP:** GSWS,LAS

SPN 314 - Spain is Different: Current Debates Shaping Spain's Future

Course Units: 1.0 The slogan "Spain is different" was coined by Francisco Franco's dictatorial regime in the 1960s as part of its campaign to advertise Spain to its northern neighbors as an exotic tourist destination characterized by sunny beaches, siestas, flamenco, and bullfights. Today, many Spaniards use the phrase colloquially, not to celebrate their country's uniqueness, but rather to comment on its perceived backwardness in comparison to other industrialized countries. The evolving meaning of this slogan epitomizes Spain's sometimes contradictory efforts to maintain local or national traditions and values while aligning with broader European and global identities. These opposing forces of progress and tradition are at the root of many of the economic, social, and cultural issues dividing public opinion in Spain today. In this course we will examine a few of these current debates through discussion of literature, cinema, and the media. Specifically, the three contentious topics that we will explore are economic globalization and workers' rights, women's rights and the violent backlash against them, and bullfighting and animal rights. **Prerequisite(s):** Any two courses from SPN 250-299 or SPN 203 . **CC:** GCHF, GWOL, WAC **ISP:** GSWS

- SPN 326 - Women Weaving Histories: Short Narratives by Latin American Female Writers

SPN 328 - Inquiring Latin American Identities: Reading Context, Space and Cultural Artifacts

Course Units: 1.0 This course examines some aspects of the cultures of Latin America to understand how they have impacted national, local, and individual identities. Latin-American cultures are conceived as processes initiated and sustained by the encounter of radically different cultures that framed and continue to shape people's lives. Particularly,

the course explores the impact of gender relations, ethnicity, physical spaces, cultural practices and beliefs on identity. Substantive theoretical readings will complement the course. **Prerequisite(s):** SPN 203 or permission of the instructor. **CC:** WAC **ISP:** GSWS, LAS

SPN 330 - Hispanic Women Writers Who Challenged the World

Course Units: 1.0 This course focuses on Latin American and Spanish women's contemporary (from 19th century to the present) short fiction. It centers on the close reading of selected works that deal with some of the most significant formative female experiences and perspectives in contemporary Latin-American societies: maternity, patriarchy, feminicide, among others. The course examines how women's creative expressions explore political and social realities that question the laws and myths surrounding their formation, call critical attention to the foundations and manifestations of a patriarchal order, and offer alternative visions of, or models for, a renewed social life. **Prerequisite(s):** Any two courses from SPN 250-299, or permission of the instructor. **CC:** LCC, HUL, JCHF, JWOL, JLIT, WAC **ISP:** GSWS, LAS

SPN 336 - Troubling Gender in Contemporary Argentine Literature and Cinema

Course Units: 1.0 This course is an introduction to contemporary Argentine literature and film with a focus on gender dynamics. We will study representative works in various genres (narrative, drama, poetry, and film) within their cultural context. Although there is a brief survey of canonical authors from the first two thirds of the 20th century, the course emphasizes cultural production after 1990. Besides the literary texts and films, we will also discuss substantive readings related to the course topics. Discussions will center on how writers, playwrights, and filmmakers deal with the following topics: the gendering of national identity; the construction of gender and sexual identities; the impact of toxic masculinities; gender notions under repressive regimes; the representation of LGBTQ subjectivities; human trafficking and violence against women. In addition to acquainting students with significant works of Argentine literature and film, the course seeks to strengthen speaking and reading abilities, to sharpen writing and critical skills, and to familiarize students with critical approaches to various literary genres and film. Class discussions and writing assignments are in Spanish. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL, HUM, JLIT, JWOL **ISP:** GSWS, LAS

- SPN 350 - Visions and Voices: Chicana Icons from Myth to Matter

SPN 380 - What's Love Got to Do with It: Gender and Nation in Hispanic and US Latino Literatures

Course Units: 1.0 An introduction to the study of literary genres thematically anchored in the intersection of gender dynamics, national politics, and the construction of identity (sexual, cultural, national). Students will read narrative, poetry, and drama from Spain, Spanish- America, and U.S. Latino communities. Theoretical readings and diverse critical approaches to literature frame the course around the portrayal of romantic/sexual relationships that acquire broader dimensions when scrutinized from the perspective of gender and national politics. How are gender and sexual identities inscribed in national identity? How cultural artifacts project and reflect the gendered body of the nation? **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL **ISP:** GSWS, LAS

SPN 417 - Death and Revenge in the Southern Cone

Course Units: 1.0 This course examines the dictatorship in Argentina, Chile, and Uruguay. Through analysis of cultural products including narrative, theater, and film, students will reflect on themes and questions such as the effects of torture and terrorism on society, the constraints of censorship, and revenge. We will read texts by Marta Traba, Luisa Valenzuela, Diana Raznovich, Eduardo Pavlovsky, Ariel Dorfman, among others. Films will include Camila and Death and the Maiden, among others. **Prerequisite(s):** Two 300-level courses. **CC:** LCCS, HUL **ISP:** GSWS, LAS

SPN 424 - Imaginarios urbanos: Interventions in the Latin American City

Course Units: 1 This course explores Latin American cities as sites where artists engage with public space in order to both call attention to injustices and experiment with practices of modifying urban life. These interventions respond to the conditions that shape each city to reveal the power relations at work. Students will examine and analyze efforts to reimagine a more democratic city as presented in short stories, stencil, graffiti, installations, escraches, photography, street theater, and teatro de la invasión. **Prerequisite(s):** Two 300-level SPN courses. **CC:** HUL, HUM, LCCS, WS, GCAD, GLIT, GWOL **ISP:** GSWS, LAS

Music

AMU 221 - From Rhythm and Blues to Radiohead: The History of Rock & Roll

Course Units: 1.0 Explores the historical development of Anglo-American rock-and-roll through lecture, video and sound recordings. This course will rely heavily on film, with an accompanying series featuring documentaries, concert films, musicals and more. Students will gain a greater understanding of the socio-cultural contexts that informed stylistic change, as well as consider the continued relevance of rock today. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, JCHF, JCAD, WAC **ISP:** AMS, GSWS

AMU 320 - Encounters with East Asian Music Cultures

Course Units: 1.0 Through live performance, discussion, and composition, this course explores key characteristics of East Asian Music Cultures. Particular attention is paid to the processes of cultural exchange between China, Korea, Japan and the rest of the world that have resulted in the rich breadth of performance traditions expressed today. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AIS, GSW

Philosophy

PHL 222 - Sports and Games

Course Units: 1 This course will introduce students to philosophical work about sports and games. Topics to be covered include the nature and value of sports and games; lying and cheating in sports and games; the ethics of performance enhancing drugs; racism, sexism, and transphobia in sports and games; and gender separation in sports and games, especially scholastic sports. **ISP:** GSWS

PHL 263 - Philosophy of Gender and Race

Course Units: 1.0 This course will introduce students to the philosophy of gender and the philosophy of race, with an eye to both theoretical issues and to issues that apply to our everyday lives within a social and political context. **Cross-Listed:** N/A **CC:** HUM **ISP:** AFR, GSW

PHL 337 - Gender Issues in Buddhism

Course Units: 1 **ISP:** GSWS

Religious Studies

Theater

ATH 104 - Dramatic Literature and Social Justice

Course Units: 1.0 Plays acted onstage provide both entertainment and a forum for audiences and actors to question their relationship with the people and culture that surround them, as we are encouraged to understand and empathize with texts and characters brought to life through performance. In this course we will survey selected plays central to and representative of the development of major trends in dramatic literature. The principles of dramatic analysis--genre, character, plot, language, style, etc.--will be explored, as well as some of the economic, geographical, political, and intellectual factors that shaped the societies in which these plays were written and thus provide a context for the various plays and playwrights. Course readings will include plays such as Antigone, Pseudolus, Everyman, Doctor Faustus, A Midsummer Night's Dream, The Importance of Being Earnest, Ubu the King, Trifles, Waiting for Godot, and more. **Cross-Listed:** EGL 102 **CC:** HUL, HUM, JLIT, WAC **ISP:** GSWS

ATH 241 - Contemporary American Theater and Drama

Course Units: 1.0 This course examines trends and notable works visible today in the American theater. We will read plays that have had major successes on Broadway and American regional theaters, as well as study avant-garde works and theatrical and performance artists engaging with new forms and techniques in order to transform theatrical performance in our culture today. Through class discussions and assignments including student presentations, seeing professional theatrical performances, research projects, and critical essays, students will develop their ability to engage critically with theatrical art and artists of our present moment. **Cross-Listed:** EGL 292 **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, declared theater major, or permission of the instructor. **CC:** HUM, WAC, JCAD, JCHF, JLIT **ISP:** AMS, GSWS

ATH 305 - American Dream on Stage

Course Units: 1.0 This course is an examination of the ways the quest for the American Dream has been portrayed-and frequently critiqued-in plays written by notable American playwrights. From Arthur Miller and Lorraine Hansberry to Lin-Manuel Miranda and Matthew Lopez, playwrights have questioned the promises of our (relatively) young nation: the idea that through positivity and hard work, we can all achieve a life of liberty and happiness. Some of the topics explored in these plays include ideals of American exceptionalism, pulling oneself up by one's bootstraps, individualism, and personal identity. Furthermore, we will work to understand how works from diverse writers address crucial interactions between literature, theatrical performance, race, culture, gender, sexuality, and American society today. **CC:** HUL, HUM, WAC **ISP:** GSWS

Division 2: Social Science Courses

Anthropology

ANT 184 - Contemporary Japanese Society

Course Units: 1.0 An anthropological introduction to contemporary Japanese society and culture. Provides an historical overview, then explores in greater depth such topics as family structure, education, religious traditions, the work place, women, and contemporary social problems. **CC:** LCC, SOCS **ISP:** AIS, GSWS

ANT 211 - Anthropology of Intimacy

Course Units: 1.0 Sex, love and marriage are all expressions of human intimacy, yet practices vary widely across societies. This course looks at universal needs for intimacy in cultural context. It begins with how men and women are defined culturally. Then it considers a range of sexual activities as societal demands or expressions of love. How does a given society define romantic love? How is homosexuality regarded? How does love magic work? Intimacy is steered through culturally defined roles, from sex workers to men playing the roles of women. Sexual antagonism sees men and women as dangerous to each other; how does love and marriage work in such societies? Marriage practices, from arranged marriage to marriage based on love, from polygamy to monogamy, all arise based on cultural demands as well. The course includes a look at romance and the emotional legacy of sexual assault on college campuses. **CC:** LCC, JCHF, JSPE **ISP:** GSWS

ANT 220 - Women's Lives Across Cultures

Course Units: 1.0 Examines women's lives in different cultures through detailed case studies and film, focusing on common experiences (e.g., motherhood, work), gender-based inequality, and sources of women's power and influence. It also examines topics that exclusively or disproportionately affect women (e.g., female genital cutting, domestic violence, rape, sex tourism) as well as the varied forms feminism takes in other cultures. **CC:** LCC, SOCS **ISP:** GSWS

ANT 222 - Childhood in Anthropological Perspective

Course Units: 1.0 This course examines childhood across cultures. Lectures and readings will use case materials drawn from North America, Europe, Africa, Oceania, and Asia to explore ways in which culture affects how parents deal with children. We will also examine the acquisition of culture by young children. We will look closely at ways in which different cultural practices shape the experience of childhood from infancy to adolescence. Topics addressed will include: beliefs about infants, language acquisition, cultural differences in theories about learning, the nature of schools in various cultures, the role of play and mass media in shaping children, the cultural shaping of gender identity, and adolescent initiation rites. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AIS, GSW

ANT 225 - Gender and Society

Course Units: 1.0 An examination of the role gender plays in human life. How does being labeled and socialized to be male or female shape peoples' daily life and life chances? How do our culture and others regard people who do not fit mainstream conceptions of maleness or femaleness? The course will discuss the concepts of gender and sex, gendered behavior and expectations, "third genders" (e.g., the North American berdache, the Indian hijra), homosexuality, transgendered individuals and sex-reassignment surgery, and cross-cultural similarities and differences. **CC:** LCC, SOCS, JCHF, JLIT, JSPE **ISP:** GSW

ANT 230 - Medical Anthropology

Course Units: 1.0 An examination of beliefs about illness, healing, and the body and how these are shaped by culture and society. Topics include healing practices across cultures, political forces shaping medical practice in the U.S., and birthing practices in different cultures. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** GSW,STS

ANT 239 - Family and Kinship

Course Units: 1.0 How do families differ across cultures? How do families change with globalization, urbanization, migration and mass education? This course examines families and extended family networks in Asia, the Pacific Islands, Africa and the US. We will start by examining marriage, looking first at marriage in linage-based societies where family ties structure economic and political relationships and where marriages are used to establish alliances between groups. Next, we will focus on the reasons why arranged marriages are giving way to love marriages in many areas of the world and why people in many countries are postponing or opting out of marriage. A subsequent unit will look at international "care chains" in which people in wealthy first world nations pay people from poorer nations to care

for children, people with long term illnesses, and the elderly. We will examine the impact of such care chains both in wealthy nations and on the families of those who migrate to take on jobs as care workers. Finally, we will examine changing ideas about the
elderly across cultures and a growing trend away from family care toward independent living and institutional care. **CC:** LCC,SOCS, GCHF, GSPE **ISP:** AIS, GSW

ANT 240 - Technology, Culture & Society

Course Units: 1.0 Examines the role of technology in cultural change and the role of culture in technological change. Particular attention will be given to: the Internet and other so-called "virtual community" formations, graphic design and other media, "reality" TV, cross-cultural advertising, and popular music. **CC:** LCC, SOCS **ISP:** FLM, GSWS, STS

ANT 272 - Psychological Anthropology

Course Units: 1.0 This course examines the influence of culture and society on individual psychology. Readings and class discussions examine the history of the way anthropologists have thought about the relationship between culture and personality. Issues examined will include: Do cultures produce and favor distinctive personality types? How is mental illness shaped by cultural beliefs and social practices? Are there distinctive "culture bound syndromes" and, if so, what produces them? Do cultures provide tools to help individuals adjust to crises? Do some cultures do this better than others? Are emotions fundamentally the same across cultures or does emotional experience vary significantly with culture? Is there a culture of psychiatry in the US? How do our cultural assumptions and our pharmaceutical industries shape our views of personality and mental illness? Cases will be drawn from Oceania, Asia, North America, and the Middle East. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AIS, GSW, STS

Economics

ECO 225 - Economics of Sin

Course Units: 1.0 Uses the tools of economic analysis to examine the markets for goods and services the sale of which is subject to public condemnation. Considers the impact and unintended consequences of economic policies toward these goods on market and social outcomes. Topics include the economics of transplantable organs, crime, addiction, intoxicants, marriage and sex. **Prerequisite(s):** ECO 101 **CC:** SOCS **ISP:** AMS, GSW

ECO 238 - Women, Technology and Globalization

Course Units: 1.0 We explore the effects of technology and globalization on women's economic outcomes. Does increased trade improve the working conditions of women? Why are women underrepresented in high-tech industries? To what extent do women find the opportunity to get involved in the knowledge-creation economy? What is the role of technology in determining the gender wage gap? **Prerequisite(s):** ECO 101 **CC:** SOCS **ISP:** GSW

ECO 381 - Seminar in Economics of Culture

Course Units: 1.0 Students will read and discuss the emerging literature on the economics of culture, become familiar with commonly used sources of data on cultural values and beliefs, and address the empirical challenges of using this data to evaluate economic theories of culture. Topics will include 1) the measurement of cultural values, 2) theories of socialization, 3) religion and economic outcomes, 4) cultural beliefs, attitudes toward government redistribution and the welfare state, 5) culture as informal institutions: trade and exchange in the absence of law, management of collective goods, and informal risk-sharing arrangements, 6) family and kinship networks as economic institutions, 7) the economic role of trust, 8) trust, social capital and political institutions, 9) immigration and theories of acculturation, 10) cultural values and institutional quality. Students will conduct a significant independent research project on the economics of culture. **Prerequisite(s):** ECO 241 and ECO 243 **CC:** SOCS, WAC-R **ISP:** GSWS

History

HST 135 - Latinos In/As U.S. History

Course Units: 1.0 What does U.S. history look like if we consider it a Latin American nation? This course explores the history of El Norte through the eyes of border-crossing, indigenous communities, Spanish settlers in the South and West, and the Latin American and Caribbean immigrant populations that have made their homes across the country since its founding. We end with a particular focus on Latin American and Latinx communities in 21st-century New York. **CC:** SOCS **ISP:** AFR, AMS, GSW, LAS

HST 171 - Europe, Africa, and the Americas in the Era of Columbus

Course Units: 1.0 A study of the relationship of Spain and Portugal with Africa, Asia, and the Americas from the early fifteenth through the late eighteenth centuries. The course examines the early civilizations of Africa, Europe, and the Americas in the era before the voyage of Columbus and the interaction among these three worlds in the centuries after the Encounter. It concludes with an examination of the cultural legacy of Africa and Europe on the indigenous societies of the Americas and the subsequent development of multicultural and multiracial independent nations. The central role of gender relations between the civilizations, the gendered conflict that characterized the era of exploration, and the role of masculinity are all examined. **CC:** LCC, SOCS **ISP:** GSWS, LAS, REL

HST 172 - Reform and Revolution in Latin America and the Caribbean

Course Units: 1.0 Examines the political and social changes in Latin America as a result of the nineteenth and twentieth century reform and revolutionary movements, including the Unidad Popular government in Chile under Salvador Allende and its overthrow by General Pinochet and the subsequent dictatorial rule. The effect of the 1959 Cuban Revolution on Latin America; the revolutionary uprisings in Central America, in Chiapas, Mexico, and against the military government of Argentina form other key areas of examination. The course places special emphasis on the intersection of gender, race and class conflicts and movements, with particular attention to the role of emerging feminist movements. **CC:** LCC, SOCS **ISP:** AFR, GSW, LAS

HST 209 - Race, Gender, and Nationalism in American Sports

Course Units: 1.0 This course examines the development and the history of US sports from the 19th through the 21st centuries with special focus on sports' bond with nationalism, race, and gender. Modern sports cannot escape its association with US emergence in international affairs at the end of the 19th century. Intertwined with the process of establishing national identity were muscular Christian notions about masculine prowess and belief in women's natural physical limitations accompanied by a persistent belief in the fundamental superiority of the white race and its obligation to dominate over "inferior" races and cultures. As surely as sport became associated with American identity, nationalism, gender, and race became integral defining characteristics of sport. This course will be driven primarily by reading and discussion. Lectures will be used to supplement and place the readings in historical perspective, but the focus will be on reading, comprehension, and analysis. Students are encouraged to bring a variety of pre-occupations, pre-conceived ideas, and personal viewpoints to the course; they will be expected to give oral and written expression to their analysis and perspectives. **CC:** SOCS **ISP:** AFR, AMS, GSWS

HST 212 - "Remember the Ladies": American Women to 1900

Course Units: 1.0 An examination of changing gender roles from 1600 to 1890. Topics include work, family, civil and legal identity, and the impact of race, class, and geographic location on women's experiences. **CC:** SOCS **ISP:** AMS, GSWS

HST 213 - The New Woman: American Women from 1900

Course Units: 1.0 An examination of changing gender roles from 1890 to the present. Topics include the evolution of feminism, and the impact of race and class on women's experiences. **CC:** SOCS **ISP:** AMS, GSWS

HST 222 - Other Voices: Women in the History of American Ideas

Course Units: 1.0 The contribution of women to the development of American intellectual and cultural life, from Charlotte Perkins Gilman to Angela Davis. **CC:** SOCS **ISP:** AMS, GSWS

HST 248 - Men, Women, and Gender in Modern Europe

Course Units: 1.0 This course is a lower-division exploration of the creation, operation, and interaction of masculinities and femininities (in the plural) in Europe between roughly 1789 and the present. We will read both primary and secondary works on the topic. "Gender history" is not simply another way of saying "women's history." Instead, we also will employ gender as a lens through which to consider the experiences of both men and women during the period. Learning objectives for the term include critiquing the use of gender as a category of historical analysis; investigating the gap between prevailing modern notions about manhood and womanhood and the lived experiences of modern men and women; and teasing apart the intersection of gender with other factors, especially race, class, age, marital status, and religious identity. **CC:** SOCS **ISP:** GSWS

HST 263 - The Tudor and Stewart Queens

Course Units: 1.0 The radical Protestant John Knox published a tract in 1558 denouncing what he called the 'monstrous regiment of women'. He had in mind three women who dominated the political scene: Queen Mary I of England (Henry VIII's Catholic daughter) Marie of Guise (widow and queen regent of the deceased James V of Scotland); and young Mary Queen of Scots, betrothed to the future king of Catholic France. Knox had the spectacularly bad luck to publish his attack on queenship at the moment when Mary I died and her Protestant sister Elizabeth ascended the throne, a queen mighty in defense of her authority and with a temper to match her illustrious father Henry VIII. These women defined British History after 1550. Looking back on these years, Francis Bacon wrote of the 'strange perturbations' of England, having been ruled by a boy king (Edward VI) and two women before finally again seeing on the throne a proper adult male, James VI of Scotland - with nice irony, Mary Queen of Scots' son. This course explores the lives of these Tudor and Stewart queens and analyzes the intersections of gender, authority, and religious zeal that defined their age. **CC:** SOCS **ISP:** GSW

HST 284 - Hobbled and Heroic: Women in China and Japan

Course Units: 1.0 A comparative look at how the societies of China and Japan shaped the various roles assumed by women in these two cultures, as well as the evolution of those roles over time. **CC:** LCC, SOCS **ISP:** AIS, GSWS

HST 286 - Women in South Asia

Course Units: 1.0 This course takes a historical approach towards the topic of gender and sexuality in South Asia, with a particular, though not exclusive, focus on the history of women in the region. The course has three major goals: first, to analyze the colonial state and its policies with respect to women and gender relations; second, to study gender relations, women's voices and women's movements within the context of nationalist struggles in the post-colonial era; and third, to understand the complexities of trying to recover the "voice" of heterogeneous groups of women in South Asia, divided along lines of caste, class, region, occupation and religion. Study material will include academic texts, films and popular television from the subcontinent. **CC:** LCC, SOCS **ISP:** GSWS, STS

HST 287 - Film and Modern India

Course Units: 1.0 This course uses a medium of visual representation-cinema-to explore the portrayal of India. It historically traces the development of the cinematic industry in India and highlights the changing images of the region since the 1950s. Each decade evokes a list of stereotypes, of ideas, and of historical realities. We will examine the extent to which films in each decade captured the reality of the period. In particular, we will trace the maturation of the idea of a nation through films and we will explore the positioning of gender in these decades. In general, this course will adopt critical approaches for looking at aesthetics and the representation of South Asia through cinema. **CC:** LCC, SOCS **ISP:** GSWS

HST 312 - "Bonds of Womanhood": History of Women's Rights in the United States

Course Units: 1.0 This course examines major themes in the study of women's rights in the United States. Topics include constitutional and legal rights changes over time; the interplay of gender with race, class, and sexuality involved in "rights" movements since the nineteenth century; and current controversies over women's rights. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS **ISP:** AMS, GSWS

HST 372 - Sex, Race and Gender in Latin America

Course Units: 1.0 This course examines the history of the intersection of race, sex and gender in Latin America from the pre-colonial period to the present, especially as evidenced in the changing status of women and the patriarchal order. This history traces the effect of broader societal transformations such as colonialism, imperialism, and economic and political developments on the gender division of labor and the construction of class, race and national identity. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** GSWS, LAS, REL

Political Science

PSC 234 - Women Political Theorists

Course Units: 1.0 Where are all the women in the history of political thought? Some thinkers we explore throughout history include Mary Astell, Mary Wollstonecraft, Harriet Taylor Mill, and Emma Goldman. Their work will prepare us to discuss the political and social thought of three prominent women thinkers of the 20th century: Simone de Beauvoir, Iris Murdoch, and Hannah Arendt. We investigate questions concerning freedom and contingency, responsibility, the nature of self in relation to others, and the limits and scope of ethical action in the work of these theorists. Women political theorists often write novels, short stories, and autobiography/biography (rather than philosophical texts) to explore political and philosophical themes. Consequently, we will be reading novels and autobiography along with political philosophy to think about the relationship between philosophy, politics, and literature. We will also be interested in considering how living their lives as women might have influenced the way these philosophers viewed major political and intellectual issues of the day. **CC:** SOCS **ISP:** GSWS

PSC 235 - African American Political Thought

Course Units: 1.0 This course will introduce students to the critical and constructive dimensions of African American political thought. We will assess the claims that Black Americans have made on the polity, how they define themselves, and how they have sought to redefine the basic terms of American public life. **CC:** SOCS, WAC **ISP:** AFR, AMS, GSWS

PSC 247 - Human (In) Security in a Comparative Perspective

Course Units: 1.0 With a focus on "the daily lives of ordinary people", the recent tradition of Human Security redefines safety as "freedom from fear and freedom from want." At the interface of security, development, and Human Rights grounding democratization, Human Security adopts the perspective of the common citizen, calling for collaboration between states and international and grassroots organizations to prevent and eliminate obstacles undermining people's autonomy, rights, and development. This course aims, first, to provide students with a solid conceptual and applied knowledge of Human Security. Second, by learning about the deep-seated conditions that hinder people's safety from fear and from want, students will gain a thicker perspective on the structural challenges for peace and democracy around the world through the eyes of the people on the ground. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, GSPE **ISP:** GSW, LAS

PSC 266 - Women and Politics

Course Units: 1.0 The political, social, and economic circumstances of women in the U.S. Topics include history of women's rights, the gendering of politics, women as political actors (voters, candidates, and government officials), and politically relevant differences across gender identities. Issues include gender equality (in the workplace, education and athletics), reproductive rights, and violence against women, among others. Special attention to the intersection of gender with other identities. **Prerequisite(s):** PSC 111 or SOC 100 or sophomore standing **CC:** JSPE **ISP:** AMS, GSWS

PSC 284 - Political Sociology

Course Units: 1.0 Issues of political power, domination, and legitimacy from a sociological perspective. Topics include the creation and maintenance of political power, the role of legitimacy and the impact of political socialization. **Cross-Listed:** SOC 240 **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AFR, AMS, GSWS

PSC 333 - Twenty-First Century American Political Thought

Course Units: 1.0 An exploration of political thinking in regard to the multiple crises the United States faces in the 21st century. Potential topics include threats to democracy in the United States by right wing groups and White Supremacy; specific challenges of structural racism, gender inequity, police violence, guns; social movements such as Black Lives Matter, #metoo, the Sunrise Movement; and the historical meanings of individualism, diversity, freedom, imperialism, and Western expansion in the US. **CC:** SOCS **ISP:** AFR, AMS, GSW

- PSC 335 - Antigones: Feminist Politics

PSC 339 - Seminar: Political Theory

Course Units: 1.0 Selected topics in political theory. Content will vary from year to year. Preference to sophomore and junior political science majors. **CC:** SOCS, WAC **ISP:** AFR, GSWS

PSC 343 - Women and Politics in the Muslim World

Course Units: 1.0 In this course we will study how politics and women intersect across the Muslim world, including the Middle East, Sub-Saharan Africa, Central Asia, and South Asia. Empirically, we will investigate the varied paths women's rights have taken in different national settings while examining similarities and differences in the degree to which women wield social, economic, and political power in their respective countries. We will seek theoretical explanation for women's status in the region, which varies significantly from country to country. Sample topics for discussion include the Koran and women, debates about the veil, honor killings, the impacts of oil, war, and foreign intervention on women's status, and Muslim female prime ministers and presidents. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** GSWS, REL

PSC 434 - Feminist Film

Course Units: 1.0 Using 10 films as our "texts" we will examine the role of women in society, the diversity of women's lives, the impact of gender roles in various cultural contexts, the possibility of alternative sexualities and ways of living, and whether we can say what constitutes a "feminist film." The course is focused on discussion of, and writing about, the films but includes analysis of feminist political theory and feminist film theory to provide tools for better interpretation. **CC:** SOCS **ISP:** AMS, FLM, GSWS

Sociology

SOC 204 - Social Construction of Deviance

Course Units: 1.0 An examination of "deviance" as a sociological phenomenon, including how the deviant label develops and how those so labeled are treated and controlled. Crime, prostitution, witch persecutions, mental illness, and the shaping of sexual identities and preferences are investigated. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** GSWS

SOC 205 - Social Work and Human Services

Course Units: 1.0 The history of social services and the development of the profession of social work. Social problems and society's response to these problems will be investigated. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** GSWS

SOC 206 - Aging and Society

Course Units: 1.0 The social, psychological, and economic consequences of aging, with an emphasis on successful aging. Social programs and policies for the aged are evaluated. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** GSWS

- SOC 208 - Social Identities and Science

SOC 212 - The American Family and Cross-Cultural Perspectives

Course Units: 1.0 This course examines historical and contemporary patterns of American family from cross-cultural perspectives. We explore the ways in which race/ethnicity, social class, gender roles, conflict and crisis, and the media influence family life. **Prerequisite(s):** SOC 100 **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AFR, AMS, GSWS

SOC 231 - Sex and Gender in American Society

Course Units: 1.0 An examination of gender and the social context of the behavior of men and women in contemporary American Society. **Prerequisite(s):** SOC 100 **ISP:** AMS, GSWS

SOC 232 - Sociology of Sexualities

SOC 233 - Race, Class, Gender, and Sexuality

Course Units: 1.0 The issues of gender, race, and class as organizing principles within sociology. The course draws broadly from the critical tradition, which focuses on issues of power, control, opportunity, gender, and economic relations. **Prerequisite(s):** SOC 100 **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AFR, AMS, GSWS

SOC 284 - Sociology of Women & Health

Course Units: 1.0 A critical introduction to the sociological analysis of issues in women's health in the contemporary United States, emphasizing how the key variables of gender, race & class structure access to health & well-being for women in our society. **Prerequisite(s):** SOC 100 **ISP:** AMS, GSWS, STS

SOC 346 - Sociology of Black Women's Culture

Course Units: 1.0 This course examines the socialization of black womanhood. We will explore how certain socio-historical norms shape black women's ideas about race, gender, class, sexuality, constructions of femininity, and public and private activism. Understanding the complexities of strategies of resistance to multiple and intersecting oppressions (race, class, gender, sexuality, etc.) forms the focus of the course. **Prerequisite(s):** Suggested: SOC 230 , SOC 233 , GSW 100 **CC:** LCC, SOCS **ISP:** AFR, AMS, GSWS

SOC 360 - Domestic Violence

Course Units: 1.0 A sociological examination of issues and questions raised by violence within American families. The public definition of family violence, subjective experiences of abusers and victims, social and individual causes and consequences of abuse, complexities and problems of social interventions. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** GSWS

SOC 362 - Family and Community Services

Course Units: 1.0 An examination of the response of community organizations and services to family life. Particular issues will include spouse and child abuse, juvenile delinquency, teenage pregnancy, daycare, and family instability and mental health. Visits to community and human service organizations will also be arranged. **CC:** SOCS **ISP:** GSWS

SOC 364 - Sex and Motherhood

Course Units: 1.0 An analysis of selected issues in the regulation of human reproduction & family building, primarily from sociological and feminist perspectives. Topics such as birth control, abortion, adolescent pregnancy, infertility & pregnancy are examined in historical and cross-cultural contexts with particular focus on the variables of gender, class and race. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS, GSWS

Division 3: Science Courses

Biology

- BIO 060 - Social Identities and Science

BIO 354 - Developmental Biology w/lab

Course Units: 1.0 The study of the developing embryo is the science of the emergence of living order. With an emphasis on experimental design, we examine cell communication, cell fate, tissue patterning and morphogenesis, and gene expression and regulation explored within the context of experimental organisms. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 354L **CC:** SCLB, WAC, WAC-R **Lecture/Lab Hours** One lab per week.

Psychology

PSY 245 - Psychology of Gender Roles

Course Units: 1.0 The psychological bases and effects of the masculine and feminine role norms in our culture. Topics include biological bases of sex differences, sexuality, romance, work and family roles, origins of sex-typed personality in family and cultural socialization. **Prerequisite(s):** PSY 100 **ISP:** GSW

PSY 261 - Psychology of Women and Gender

Course Units: 1.0 This course will introduce students to the psychology of gender. We will examine both how psychologists study gender and how psychology itself can be a gendered field. Time will be spent addressing relevant research methods, theories, and applications. During this course, students will learn about the different research methods, clinical techniques, and applications used by psychologists that are relevant to the psychology of gender. In focusing on psychology's role in examining women and gender, students will be exposed to primary source readings in the field and personal accounts. Lastly, students will engage with this material via in-depth class discussions and diverse assignments. **Prerequisite(s):** PSY 100 **CC:** SOCS **ISP:** GSWS

- PSY 262 - Clinical Psychology: Peer Interventions

PSY 347 - Psychology of Sexuality

Course Units: 1.0 We will examine the varied forms of human sexuality from a psychological perspective. This analysis will include several theoretical approaches (e.g., comparative, biological, evolutionary, psychoanalytic, queer theory) and a range of topics (e.g., sexual development across the lifespan, choice of gender of partners, the relation of sexuality and gender, power relations in sexuality). **Prerequisite(s):** PSY 100 **ISP:** GSW

PSY 450 - Seminar in Clinical Psychology

Course Units: 1.0 A selected area of clinical psychology. Topic will be announced in advance by the instructor. **Prerequisite(s):** PSY 250 or permission of the instructor. **CC:** WS

International Programs cross-listed with GSW

Brazil

MLT 281 - Screening Identities in Latin American Cinema

Course Units: 1.0 A survey of the main trends in film production in Latin America since the 1950s. Readings and discussions on issues of film history, aesthetics, representation and reception will frame our critical reflection on the construction of various types identities in some of the national cinemas across Latin America. **CC:** HUM, LCC, JCAD, JCHF, WAC **ISP:** FLM, GSWS, LAS

MLT 286T - Gender and Identity in Contemporary Latin American Cinema

Course Units: 1.0 This course offers an interdisciplinary study of contemporary Latin American cinema focusing on issues of representation, reception and spectatorship, and the construction of (national, cultural, gender, and racial) identity. Besides the films, reviews and substantive readings will contribute to an examination of five main topics: 1) Constructions of Gender; 2) Representations of National Identity; 3) Race and Class; 4) Queer Images; and, 5) Imagining Marginality. All films studied in class will link two or more of these topics. **CC:** HUM, LCC **ISP:** FLM, GSWS, LAS

LAS 200T - Women, Environment, Social Change

Course Units: 1.0 **ISP:** ENS, GSWS

Argentina

TAB 321T - Buenos Aries Mini-term

Course Units: **ISP:** GSWS, LAS

Gender, Sexuality, and Women's Studies Minor

Requirements for the Minor:

Six courses, including GSW 100, or GSW 101 [if a student takes both introductory courses, one course will count toward a GSWS elective], GSW 495, and four remaining courses with GSW designation from at least two divisions, selected in consultation with the program director. Completing GSW 100 before the student's senior year is required, or by the permission of the program director.

Gender, Sexuality, and Women's Studies, B.A.

Requirements for the Major:

Twelve courses, including either GSW 100 or GSW 101. If a student takes both introductory courses, one course will count toward a GSWS elective, GSW 495, and a two-term senior thesis. The remaining eight courses must be selected from more than 50 GSW courses offered in a variety of departments and crossing at least two of the College's four divisions. Completing GSW 100 before the student's senior year is required, or by permission of the program director. A one-term internship at a designated locale in the Capital District is highly recommended and can be counted as one of the eight required courses (see director for details). Students should confer with the program director in designing and fulfilling their requirements.

Requirements for Honors:

Candidates for honors must meet College requirements, have a cumulative grade point average of 3.3 in Gender, Sexuality, and Women's Studies, at least three "A" or "A-minus" grades in Gender, Sexuality, and Women's Studies courses, and have earned an "A" or "A-minus" on the senior thesis. Departmental honors are formally awarded at the discretion of the director of Gender, Sexuality, and Women's Studies in consultation with GSWS faculty.

Geosciences

Chair: Professor D. Gillikin
Faculty: Professors H. Frey, J. Garver, D. Rodbell; Associate Professor M. Stahl; Senior Lecturer A. Verheyden-Gillikin, M. Manon
Staff: C. Angley (Administrative Assistant)

Course Selection Guidelines: None of the 100-level courses in Geosciences have prerequisites and any may serve as an entry point into upper level courses. ENS 100 may also serve as an entry point. Preference for 100-level courses is

given to first-year students and sophomores. GEO 120 should be taken as soon as possible. Students should take a 200-level geoscience course after taking an introductory course, ideally in the second year or earlier. The 200 and 300 level geoscience courses may be taken in any order, with one exception. Students should have completed CHM 101 before taking GEO 220 ; GEO 220 is a prerequisite for GEO 320 . All Geosciences majors are required to take GEO 405 in the senior year. All Geosciences majors are required to complete a senior thesis, which may be either 1 term (GEO 498) or 2-3 terms (GEO 495 , GEO 496 and GEO 497); GEO 496 and GEO 498 satisfy the senior writing requirement (WS).

Geosciences (ID), B.S.

Requirements for Interdepartmental Majors:

Interdepartmental majors will follow the guidelines as described in Academic Program and Policies section in this catalog.

The interdepartmental geosciences major must be approved by the chair of the Geosciences Department and should include a plan written in consultation with advisors from both departments to form a cohesive and integrated major.

There are two options as follows:

Option 1 (Geosciences / Other)

Students who wish to have their interdepartmental major listed as Geosciences / Other (i.e. Geosciences / Physics, Geosciences / Biology), etc.) are required to take eight geology courses.

The 8 required geosciences courses include:

- a GEO 100-level course with laboratory

GEO 120 - The Story of Earth and Life

Course Units: 1.0 An investigation of Earth's dynamic history and evolutionary changes over the past 4.5 billion years. Topics include impacts of climate change, the evolution of life, major changes in the nature of Earth's atmosphere and oceans, and for major mountain building events that have affected the continents as well as the evolutionary development of plant and animal life as recorded in the geologic record. Specific topics include the origin of life, mass extinctions of dinosaurs and other organisms, paleoclimate, and the geologic history of New York State. The link between geology, chemical cycles and life is highlighted, as is the relation of past biogeochemical changes to current global environmental change. Field trips during lab investigate local geologic history and the course may require a weekend field trip. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 120L **CC:** SCLB, GNPS, SET **ISP:** ENS, STS

GEO 405 - Geosciences Senior Seminar

Course Units: 1.0 Senior capstone course required of all geosciences majors that integrates concepts from all disciplines of geology and requires students to engage in scientific discussions. The course covers current developments in the geosciences as reported in the primary literature. Students will critically read, present, and discuss recently-published articles. Students will also give oral presentations of their original thesis research. To improve their presentation skills, students will do extensive peer review and self-assessment. **Prerequisite(s):** Geosciences major and senior standing **CC:** WS

- and 5 200-level (or higher) geosciences courses or electives

Option 2 (Other / Geosciences)

Students who wish to have their interdepartmental major listed as Other / Geosciences (i.e. Physics / Geosciences, Biology / Geosciences) are required to take six geosciences courses.

The 6 required geosciences courses include:

- a GEO 100-level course with laboratory

GEO 120 - The Story of Earth and Life

Course Units: 1.0 An investigation of Earth's dynamic history and evolutionary changes over the past 4.5 billion years. Topics include impacts of climate change, the evolution of life, major changes in the nature of Earth's atmosphere and oceans, and for major mountain building events that have affected the continents as well as the evolutionary development of plant and animal life as recorded in the geologic record. Specific topics include the origin of life, mass extinctions of dinosaurs and other organisms, paleoclimate, and the geologic history of New York State. The link between geology, chemical cycles and life is highlighted, as is the relation of past biogeochemical changes to current global environmental change. Field trips during lab investigate local geologic history and the course may require a weekend field trip. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 120L **CC:** SCLB, GNPS, SET **ISP:** ENS, STS

- and 4 200-level (or higher) geosciences courses or electives

Requirements for Honors in Geosciences:

The major requirements as specified above are required, as are the GPA requirements of Union College described elsewhere in this catalog. A senior research thesis is required, normally consisting of at least two terms of GEO 495 and GEO 496 (independent research with a faculty member) and presentation at Steinmetz Symposium or other conference as approved by the advisor. Interdepartmental majors must consult with their advisors in both disciplines during their junior year to receive approval for an interdepartmental thesis. The Geosciences component of an interdepartmental thesis will normally incorporate at least one term of geoscience research.

Geosciences Minor

Requirements for the Minor:

The 6 required courses:

- any introductory 100-level geosciences course with a laboratory or ENS 100
- and any five geosciences required courses or electives numbered 200 or higher.

Geosciences, B.S.

Requirements for the Major:

A minimum of eleven courses in the department including:

- Any 100 level Geoscience course with a laboratory (or ENS 100)
- **Choose an introductory offering (1):**

ENS 100 - Introduction to Environmental Studies

Course Units: 1.0 An introduction to environmental studies from a scientific, policy, and engineering perspective. This course covers human-environment interactions, with a focus on the impacts of human activities on natural systems such as climate, air, water, and species diversity and the ensuing environmental injustice. The course discusses sustainable solutions for how we can build systems that will support billions of humans and the natural world. Fieldwork during lab periods involves the investigation of local environmental problems and solutions. This course is intended for first- and second-year Environmental Science and Environmental Policy majors, but it is open to all students. **Corequisite(s):** ENS 100L **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 106 - Introduction to Oceanography

Course Units: 1.0 The oceans cover 71% of the planet, 97% of the earth's available water, and 50% of the planet's species, but more than 95% of the ocean remains unexplored. This course covers physical, chemical, and biological oceanography. The course involves an examination of plate tectonics, ocean currents and the forces driving them, the role of the oceans in climate change, coastal processes and sea level change, biological productivity, and the ocean fishing industries. **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 109 - Global Climate Change

Course Units: 1.0

Global climate change is the defining environmental issue of our time. The impacts of climate change disproportionally affect populations who have contributed the least to atmospheric greenhouse gas loading. This course will review the basis for the overwhelming scientific consensus that ongoing warming is not natural; topics include: the radiation balance of Earth, the role of greenhouse gases on Earth's surface temperature, atmospheric and oceanic circulation, and natural oscillators in the climate system. A significant portion of the course is dedicated to understanding natural climatic variability. Students will prepare and submit policy briefs to policy makers at the federal, state, and/or local level that outline ways to mitigate and/or adapt to climate change. Preference given to first and second year students. **Corequisite(s):** GEO-109L
CC: SET, GNPS **ISP:** ENS, STS

GEO 110 - Introduction to Geosciences

Course Units: 1.0 Examination of Earth materials and processes: How our dynamic planet works including plate tectonics, geologic age determination, processes that form the rocks we see at the Earth's surface, development of the stunning variety of landscapes we see, and other topics of contemporary interest including floods, underground water resources, coastal erosion, earthquakes, landslides, volcanoes, and climate change. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 110L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 112 - Environmental Geology

Course Units: 1.0 The increasing interplay between the environment and human activity has profound effects on our landscape and society. This course focuses on anthropogenic issues such as climate change, soil and groundwater contamination, traditional petroleum resource extraction and dependence, mineral and water resources, and alterative sources of energy. To understand how humans have perturbed the natural environment, it is critical to understand geologic principles and processes. The course also explores natural disasters including earthquakes, volcanoes, hurricanes, landslides, floods, and coastal erosion and their effects on different segments of society, as the impacts of

natural disasters are affected by various socio-economic factors. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 112L **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 115 - Intro to the Atmosphere

Course Units: 1 Weather and climate influence nearly every aspect of our lives, from tasks such as what clothes to wear to the spectacular sights of extreme events such as hurricanes and thunderstorms. However, human activities are increasingly altering the state of the atmosphere through the emission of greenhouse gasses and aerosols. In this course, we
will cover the foundational concepts of atmospheric science that are necessary to develop an intuitive understanding of weather and climate. We will then apply the basic principles
to explore the origins of extreme weather and global climate change. **Corequisite(s):** GEO 115L **CC:** GNPS **ISP:** ENS, STS,

GEO 117 - Natural Disasters

Course Units: 1.0 An introduction to the geologic processes causing floods, earthquakes, volcanoes, landslides, and other natural hazards and how hazards affect people and society. The course will include discussion of major events in the geologic and historical record as well as future hazard potential. We will assess the risks humans face in different regions, including local hazards, our contribution to geologic hazards, and how we can minimize and cope with future events. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 117L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 160 - Environmental Challenges in the Mohawk Watershed

Course Units: 1.0 This courses in an introductory course that investigates the complex intersection of surface-water hydrology and society. Specific modules address hydrology in a changing climate, water quality, dams and the Erie Canal, invasive species and pathways, municipal drinking water, floods, and river-proximal development: all environmental problems on the Mohawk related to water and hydrology in the watershed. While the Mohawk Watershed is of local and regional interest, the issues and problems addressed in this course are applicable nationwide. They deal with how a changing climate affects surface-water hydrology, how our national infrastructure and the built environment has been stressed due to age, damaging extreme events and pollution. We explore how our relationship with rivers is changing. This course is intended for all students at Union College, but it will be of special interest to those students interested in water, especially in the context of rivers, climate change, water infrastructure, and urban planning and development. **Prerequisite(s):** Preference is fiven to first and second year students. **Corequisite(s):** GEO 160L **CC:** SCLB, GNPS, GETS, WAC **ISP:** ENS

Core courses in Geosciences
Required core courses (6):

GEO 120 - The Story of Earth and Life

Course Units: 1.0 An investigation of Earth's dynamic history and evolutionary changes over the past 4.5 billion years. Topics include impacts of climate change, the evolution of life, major changes in the nature of Earth's atmosphere and oceans, and for major mountain building events that have affected the continents as well as the evolutionary development of plant and animal life as recorded in the geologic record. Specific topics include the origin of life, mass extinctions of dinosaurs and other organisms, paleoclimate, and the geologic history of New York State. The link between geology, chemical cycles and life is highlighted, as is the relation of past biogeochemical changes to current global environmental change. Field trips during lab investigate local geologic history and the course may require a weekend field trip. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 120L **CC:** SCLB, GNPS, SET **ISP:** ENS, STS

GEO 201 - Stratigraphy and Depositional Environments of New York

Course Units: 1.0 Tectonic events revealed through the stratigraphy and inferred depositional environments of the lower Paleozoic sedimentary rock sequences in eastern New York. Stratigraphic and sedimentologic concepts are explored through weekly field studies and comparison with modern depositional systems. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 201L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS

GEO 202 - Geomorphology

Course Units: 1.0 Processes operating on and near the Earth's surface are responsible for the development of landforms, and the evolution of these landforms through time. This course covers erosional and depositional processes of glaciers, rivers, hillslopes, and wind, and the geochemical reactions responsible for the formation of soils and caves. These topics are covered within the context of the geologic evolution of the Mohawk Valley since the end of the last Ice Age. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 202L **CC:** WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS

GEO 220 - Mineral Science

Course Units: 1.0 Mineral science is foundational for other geology and environmental science courses, as well as many other scientific disciplines that encounter crystalline solids. This class provides students with a solid understanding of minerals, which are the building blocks of all rocks on this and every other planet, and provide most of our industrial resources, many building materials and precious gems. A successful student leaving this class will be able to identify most common minerals when they occur "in the wild" and be familiar with their internal structure and crystal chemistry. The practical use of state-of-the- art analytical techniques common to the study of solid materials is emphasized to elucidate the links between internal crystalline structure and macroscopic physical properties. Students will use the scanning electron microscope, the x-ray diffractometer and the polarizing light microscope. In addition to learning the fundamentals of mineral science, students will gain appreciation for the beauty and symmetry present in the natural world. **Prerequisite(s):** CHM 101 or equivalent and any 100-level geosciences course. **Corequisite(s):** GEO 220L **ISP:** ENS

GEO 307 - Structural Geology

Course Units: 1.0 In Structural Geology we study the geometry and dynamics of deformed rocks, using detailed descriptions and kinematic analysis of field sites. If we wish to understand the formation of mountain belts, or their climatically controlled destruction, the relationship of one rock unit to another, or one mineral grain to the next is of fundamental importance. Students will acquire the tools necessary to describe and understand the geometry and dynamics of deformed rocks and the larger-scale orogenies they are a part of, with a practical focus on field work to understand the structural evolution of eastern New York. We will explore stress and strain, folding, faulting, cleavage formation, map interpretation, and the relationships between plate tectonic settings and crustal structure. There is a major emphasis on developing and sharpening of multi-dimensional reasoning skills. Students will also gain experience writing scientific reports which integrate observational data, field measurements, and the existing literature. In addition to several local field trips during lab, the course includes a weekend trip to explore key localities from the Taconic Orogeny in Massachusetts and Vermont. **Prerequisite(s):** Any geosciences course numbered 200 or higher, or permission of the instructor. **Corequisite(s):** GEO 307L

GEO 320 - Petrology of Igneous and Metamorphic Rocks

Course Units: 1.0 Petrology is the study of rocks and the conditions under which they form and evolve. This course will explore how the processes of melting and subsequent crystallization creates igneous rocks in different tectonic environments and how heat, pressure, and strain create metamorphic rocks. Emphasis will be on integrating different

types of data (e.g. field observations, mineral assemblages, whole-rock geochemistry, mineral compositions) to understand the origin and evolution of rocks in igneous and metamorphic systems. Students will examine and characterize minerals, textures, and compositions of rocks in thin sections using a polarizing microscope, scanning electron microscope, and laser ablation inductively-coupled mass spectrometer. Rock sample suites studied could include those from Iceland, Montserrat, Mexico, New England, the Stillwater Complex (MT), and Dutchess County, NY. The course includes local field trips to see outcrops and collect samples on 2-3 weekend days to the Adirondacks, Catskills, and/or Vermont and Massachusetts. **Prerequisite(s):** GEO 220 **Corequisite(s):** GEO 320L **ISP:** ENS

Electives

The Geosciences curriculum offers two tracks 1) Dynamic Earth, and 2) Environmental Geosciences. Students must choose two classes in one of the tracks.

Choose a track (2 courses in one track):

Dynamic Earth Geosciences Track

GEO 205 - Active Tectonics

Course Units: 1.0 This course explores the dynamics of active plate boundaries and plate motions as revealed in plate margin deformation, earthquakes, volcanic activity, and metamorphism. Includes an introduction to stress and strain, deformation mechanisms, faults and folds, geochronology, and petrology of distinct rocks in convergent settings. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **ISP:** ENS

GEO 206 - Volcanology

Course Units: 1.0 Volcanic eruptions showcase the beauty, complexity, and destructive forces of nature. This course tackles the questions of why volcanoes erupt (a fundamental question without universal agreement!), where they erupt, how they erupt, how we predict eruptions, and the effects of eruptions on societies. Case studies include famous eruptions such as Vesuvius, Yellowstone, Hawaii, and Mt. St. Helens, as well as some volcanoes being researched by Union faculty and students in the Caribbean, Pacific Northwest, and Mexico. Students learn the different ways that volcanoes are monitored (seismic, gas emissions, hydrothermal waters, deformation). The course highlights ongoing current volcanic activity and monitoring and students engage in multiple role-playing exercises using data to forecast eruptions and deal with a volcanic crisis. Students will become more proficient in science communication and how to convey information to the public through videos, infographics, and other forms of media. This course will include a spring break trip to Kilauea volcano in Hawaii. All students must meet basic term abroad requirements and submit an application. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 206L **ISP:** ENS

GEO 208 - Paleontology, Paleobiology, and Paleoecology

Course Units: 1.0 Nearly all species that have existed on Earth are now extinct and are only known through the fossil record. This course examines the evolution and history of life on Earth as interpreted from the fossil record. Topics include fossil preservation, taphonomy, ontogeny, diversity trajectories through geologic time, evolutionary mechanisms, extinction, paleobiology, paleoecology, and paleoclimate. Special emphasis will be placed on using

fossils to interpret ancient environments as well as deciphering past climates. The course focuses on the fossil record of marine invertebrates, but major groups of vertebrates (such as dinosaurs) and plants are also covered. **Cross-Listed:** BIO 208 **Prerequisite(s):** Any geosciences or biology course or ENS 100 **Corequisite(s):** GEO 208L **CC:** SCLB **ISP:** ENS

GEO 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on Earth and serves as a vital resource that supports the economies and ecosystems of the world - including providing much of the irrigation water that grows our food, supplying drinking water to over 2 billion people, and sustaining surface water bodies and groundwater dependent ecosystems. With the world's groundwater resources threatened by intensive groundwater pumping, environmental and climate change, and the release of contaminants into the environment, there is a pressing need to better understand and manage this resource. Groundwater hydrology is a highly interdisciplinary field that brings together the geologic and environmental sciences with engineering. This course will begin by exploring the environmental and geologic factors that influence the occurrence and movement of groundwater. We will then delve into the physical laws the govern groundwater flow and learn how to model these flows. Later in the course we will cover the role of groundwater in a range of geologic and ecological processes. We will also cover engineering applications of groundwater such as the hydraulics of pumping wells, land subsidence, and the movement of contaminants within aquifers. Students will leave this course with the fundamental knowledge needed to begin answering the scientific and engineering challenges related to our groundwater resources. **Cross-Listed:** ENS 210 **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 210L **CC:** GDQR, GETS, GNPS **ISP:** ENS

GEO 302 - Geochemical Systems and Modeling

Course Units: 1.0 Investigation of the Earth as a chemical system and using chemical tools to understand geologic processes. Topics include origin of the elements, formation and differentiation of the Earth, igneous processes, radioactive isotopes and radiometric dating, and geochemistry of near-surface waters and the oceans. Work includes theory, sample collection, sample preparation, chemical analysis using in-house equipment, and computer modeling of the using the acquired data. Includes readings and discussions of the contemporary geochemical literature. **Prerequisite(s):** CHM 101 or equivalent **Corequisite(s):** GEO 302L **ISP:** ENS

GEO 303 - Earthquakes and the study of the Earth's Interior

Course Units: 1.0 In this course students will learn about the various geophysical methods used to probe the Earth's interior. With a heavy focus on earthquakes and seismology, the course explores the question of how we learn about the Earth beneath our feet. Through the hands-on use of modern geophysical field equipment we will explore the deep and shallow structure of the whole earth. We will learn about finding geological resources and about the physical explanations for plate tectonics. We will also examine how radioactivity and heat flow within the earth can tell us about our warming climate. A common thread throughout the course is computer modeling, data acquisition, signal processing and associated uncertainties. By the end of the course, students will have a familiarity with the differences between the many geophysical surveying methods and the different cases in which they could be employed. **Prerequisite(s):** Any 100-level geosciences or physics course or ENS 100 **Corequisite(s):** GEO 303L **ISP:** ENS

Environmental Geosciences Track

GEO 203 - Lakes and Environmental Change

Course Units: 1.0 Modern limnology and the record of environmental change as recorded in the physical and chemical properties of lake water and lake sediments. Includes a term-long research project on two local lakes, and the

interpretation of the proxy paleoenvironmental indicators contained in sediment cores from these lakes. **Prerequisite(s):** Any 100-level geosciences or biology course or ENS 100 **Corequisite(s):** GEO 203L **ISP:** ENS

GEO 207 - Stable Isotopes in Environmental Science

Course Units: 1.0 Stable isotopes have become a fundamental tool in many biogeoscientific studies, from reconstructing past climates to tracking animal migration or unraveling foodwebs and even to study the origin of life on Earth and possibly other planets. This course highlights the applications of stable isotopes in biological, ecological, environmental, archeological, and geological studies. Students learn the fundamentals of stable isotope biogeochemistry in order to understand the uses and limitations of this tool. This course starts with an introduction to the fundamentals of stable isotope geochemistry and then moves on to applied topics such as paleoceanography and paleoclimatology proxies, hydrology, sediments and sedimentary rocks, biogeochemical cycling, the global carbon cycle, photosynthesis, metabolism, ecology, organic matter degradation, pollution, and more. **Prerequisite(s):** Any geosciences, biology, or chemistry course or ENS 100 , or permission of the instructor. **Corequisite(s):** GEO 207L **CC:** WAC, GDQR, GNPS **ISP:** ENS

GEO 209 - Paleoclimatology

Course Units: 1.0 Climate is fundamentally relevant to modern and ancient societies. Global warming is occurring today, and whether it is driven by human activities (e.g., CO2, CH4 emissions) or by natural climate cycles can only be determined by understanding natural climatic variability. Fortunately, there are many tools, and natural climatic records that can provide us with information on past climate (e.g. tree rings, ice cores from glaciers, and sediment cores from lakes and oceans). Obtaining, documenting and interpreting these records is the field of paleoclimatology, and it is the focus of this course. Past climate variability is used to highlight possible scenarios of future climate change. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 209L **CC:** SCLB **ISP:** ENS

GEO 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on Earth and serves as a vital resource that supports the economies and ecosystems of the world - including providing much of the irrigation water that grows our food, supplying drinking water to over 2 billion people, and sustaining surface water bodies and groundwater dependent ecosystems. With the world's groundwater resources threatened by intensive groundwater pumping, environmental and climate change, and the release of contaminants into the environment, there is a pressing need to better understand and manage this resource. Groundwater hydrology is a highly interdisciplinary field that brings together the geologic and environmental sciences with engineering. This course will begin by exploring the environmental and geologic factors that influence the occurrence and movement of groundwater. We will then delve into the physical laws the govern groundwater flow and learn how to model these flows. Later in the course we will cover the role of groundwater in a range of geologic and ecological processes. We will also cover engineering applications of groundwater such as the hydraulics of pumping wells, land subsidence, and the movement of contaminants within aquifers. Students will leave this course with the fundamental knowledge needed to begin answering the scientific and engineering challenges related to our groundwater resources. **Cross-Listed:** ENS 210 **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 210L **CC:** GDQR, GETS, GNPS **ISP:** ENS

GEO 300 - Glacial and Quaternary Geology

Course Units: 1.0 The transformation of snow to ice, the mass balance of glaciers, types of glaciers, and the processes that control glacier sliding, erosion, and deposition. Includes techniques commonly employed to date Quaternary deposits and an examination of the geologic record of the Ice Ages as recorded in glaciers, glacial deposits, and marine and lake sediments of the Quaternary period. Weekly labs document the geologic record of the last glaciation in exposures in the southern Adirondacks, central Hudson Valley, eastern Mohawk Valley, and northern Schoharie

Valley. **Prerequisite(s):** Any 200-level geosciences course, or permission of the instructor. **Corequisite(s):** GEO 300L **ISP:** ENS

GEO 302 - Geochemical Systems and Modeling

Course Units: 1.0 Investigation of the Earth as a chemical system and using chemical tools to understand geologic processes. Topics include origin of the elements, formation and differentiation of the Earth, igneous processes, radioactive isotopes and radiometric dating, and geochemistry of near-surface waters and the oceans. Work includes theory, sample collection, sample preparation, chemical analysis using in-house equipment, and computer modeling of the using the acquired data. Includes readings and discussions of the contemporary geochemical literature. **Prerequisite(s):** CHM 101 or equivalent **Corequisite(s):** GEO 302L **ISP:** ENS

GEO 305 - Global Biogeochemical Cycles

Course Units: 1.0 Biology, geology and chemistry are intricately linked to form the world around us. Biogeochemical cycles set the stage for life on Earth. This course explores the carbon, nitrogen, water, phosphorus, and sulfur cycles in the critical zone and oceans. The critical zone is the terrestrial layer that extends from the bedrock to the top of vegetation, and this course continues into estuaries and the open ocean. We investigate how biological (e.g., primary production, respiration), anthropogenic (e.g., urbanization, pollution) and geological processes (e.g., tectonics, rock weathering) influence the critical zone and oceans, and in turn how these cycles influence life and climate. Field studies focus on tropical marine biogeochemistry of coral reefs, mangrove forests, seagrass meadows, lagoons and estuaries. Course includes a required week-long field trip to a remote field station in Panama. There are additional costs associated with field trip expenses, but students can apply for travel assistance. All students must meet basic term abroad requirements and submit an application. This course is open to all students, but preference will be given to those with a declared major in geosciences, environmental science, chemistry, or biology. **Cross-Listed:** BIO 235 **Corequisite(s):** GEO 305L **Prereq/Corequisite(s):** Take a course from either BIO, CHM, GEO or ENS 100 . **CC:** WAC, WAC-R **ISP:** ENS

Additional Electives (2):

Take any two from the list below (no double counting from above)*

GEO 203 - Lakes and Environmental Change

Course Units: 1.0 Modern limnology and the record of environmental change as recorded in the physical and chemical properties of lake water and lake sediments. Includes a term-long research project on two local lakes, and the interpretation of the proxy paleoenvironmental indicators contained in sediment cores from these lakes. **Prerequisite(s):** Any 100-level geosciences or biology course or ENS 100 **Corequisite(s):** GEO 203L **ISP:** ENS

GEO 205 - Active Tectonics

Course Units: 1.0 This course explores the dynamics of active plate boundaries and plate motions as revealed in plate margin deformation, earthquakes, volcanic activity, and metamorphism. Includes an introduction to stress and strain, deformation mechanisms, faults and folds, geochronology, and petrology of distinct rocks in convergent settings. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **ISP:** ENS

GEO 206 - Volcanology

Course Units: 1.0 Volcanic eruptions showcase the beauty, complexity, and destructive forces of nature. This course tackles the questions of why volcanoes erupt (a fundamental question without universal agreement!), where they erupt,

how they erupt, how we predict eruptions, and the effects of eruptions on societies. Case studies include famous eruptions such as Vesuvius, Yellowstone, Hawaii, and Mt. St. Helens, as well as some volcanoes being researched by Union faculty and students in the Caribbean, Pacific Northwest, and Mexico. Students learn the different ways that volcanoes are monitored (seismic, gas emissions, hydrothermal waters, deformation). The course highlights ongoing current volcanic activity and monitoring and students engage in multiple role-playing exercises using data to forecast eruptions and deal with a volcanic crisis. Students will become more proficient in science communication and how to convey information to the public through videos, infographics, and other forms of media. This course will include a spring break trip to Kilauea volcano in Hawaii. All students must meet basic term abroad requirements and submit an application. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 206L **ISP:** ENS

GEO 207 - Stable Isotopes in Environmental Science

Course Units: 1.0 Stable isotopes have become a fundamental tool in many biogeoscientific studies, from reconstructing past climates to tracking animal migration or unraveling foodwebs and even to study the origin of life on Earth and possibly other planets. This course highlights the applications of stable isotopes in biological, ecological, environmental, archeological, and geological studies. Students learn the fundamentals of stable isotope biogeochemistry in order to understand the uses and limitations of this tool. This course starts with an introduction to the fundamentals of stable isotope geochemistry and then moves on to applied topics such as paleoceanography and paleoclimatology proxies, hydrology, sediments and sedimentary rocks, biogeochemical cycling, the global carbon cycle, photosynthesis, metabolism, ecology, organic matter degradation, pollution, and more. **Prerequisite(s):** Any geosciences, biology, or chemistry course or ENS 100 , or permission of the instructor. **Corequisite(s):** GEO 207L **CC:** WAC, GDQR, GNPS **ISP:** ENS

GEO 208 - Paleontology, Paleobiology, and Paleoecology

Course Units: 1.0 Nearly all species that have existed on Earth are now extinct and are only known through the fossil record. This course examines the evolution and history of life on Earth as interpreted from the fossil record. Topics include fossil preservation, taphonomy, ontogeny, diversity trajectories through geologic time, evolutionary mechanisms, extinction, paleobiology, paleoecology, and paleoclimate. Special emphasis will be placed on using fossils to interpret ancient environments as well as deciphering past climates. The course focuses on the fossil record of marine invertebrates, but major groups of vertebrates (such as dinosaurs) and plants are also covered. **Cross-Listed:** BIO 208 **Prerequisite(s):** Any geosciences or biology course or ENS 100 **Corequisite(s):** GEO 208L **CC:** SCLB **ISP:** ENS

GEO 209 - Paleoclimatology

Course Units: 1.0 Climate is fundamentally relevant to modern and ancient societies. Global warming is occurring today, and whether it is driven by human activities (e.g., CO2, CH4 emissions) or by natural climate cycles can only be determined by understanding natural climatic variability. Fortunately, there are many tools, and natural climatic records that can provide us with information on past climate (e.g. tree rings, ice cores from glaciers, and sediment cores from lakes and oceans). Obtaining, documenting and interpreting these records is the field of paleoclimatology, and it is the focus of this course. Past climate variability is used to highlight possible scenarios of future climate change. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 209L **CC:** SCLB **ISP:** ENS

GEO 210 - Groundwater Hydrology

Course Units: 1.0 Groundwater accounts for 97% of the available freshwater on Earth and serves as a vital resource that supports the economies and ecosystems of the world - including providing much of the irrigation water that grows our food, supplying drinking water to over 2 billion people, and sustaining surface water bodies and groundwater dependent ecosystems. With the world's groundwater resources threatened by intensive groundwater pumping, environmental and climate change, and the release of contaminants into the environment, there is a pressing need to better understand and manage this resource. Groundwater hydrology is a highly interdisciplinary field that brings

together the geologic and environmental sciences with engineering. This course will begin by exploring the environmental and geologic factors that influence the occurrence and movement of groundwater. We will then delve into the physical laws the govern groundwater flow and learn how to model these flows. Later in the course we will cover the role of groundwater in a range of geologic and ecological processes. We will also cover engineering applications of groundwater such as the hydraulics of pumping wells, land subsidence, and the movement of contaminants within aquifers. Students will leave this course with the fundamental knowledge needed to begin answering the scientific and engineering challenges related to our groundwater resources. **Cross-Listed:** ENS 210 **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **Corequisite(s):** GEO 210L **CC:** GDQR, GETS, GNPS **ISP:** ENS

GEO 300 - Glacial and Quaternary Geology

Course Units: 1.0 The transformation of snow to ice, the mass balance of glaciers, types of glaciers, and the processes that control glacier sliding, erosion, and deposition. Includes techniques commonly employed to date Quaternary deposits and an examination of the geologic record of the Ice Ages as recorded in glaciers, glacial deposits, and marine and lake sediments of the Quaternary period. Weekly labs document the geologic record of the last glaciation in exposures in the southern Adirondacks, central Hudson Valley, eastern Mohawk Valley, and northern Schoharie Valley. **Prerequisite(s):** Any 200-level geosciences course, or permission of the instructor. **Corequisite(s):** GEO 300L **ISP:** ENS

GEO 302 - Geochemical Systems and Modeling

Course Units: 1.0 Investigation of the Earth as a chemical system and using chemical tools to understand geologic processes. Topics include origin of the elements, formation and differentiation of the Earth, igneous processes, radioactive isotopes and radiometric dating, and geochemistry of near-surface waters and the oceans. Work includes theory, sample collection, sample preparation, chemical analysis using in-house equipment, and computer modeling of the using the acquired data. Includes readings and discussions of the contemporary geochemical literature. **Prerequisite(s):** CHM 101 or equivalent **Corequisite(s):** GEO 302L **ISP:** ENS

GEO 303 - Earthquakes and the study of the Earth's Interior

Course Units: 1.0 In this course students will learn about the various geophysical methods used to probe the Earth's interior. With a heavy focus on earthquakes and seismology, the course explores the question of how we learn about the Earth beneath our feet. Through the hands-on use of modern geophysical field equipment we will explore the deep and shallow structure of the whole earth. We will learn about finding geological resources and about the physical explanations for plate tectonics. We will also examine how radioactivity and heat flow within the earth can tell us about our warming climate. A common thread throughout the course is computer modeling, data acquisition, signal processing and associated uncertainties. By the end of the course, students will have a familiarity with the differences between the many geophysical surveying methods and the different cases in which they could be employed. **Prerequisite(s):** Any 100-level geosciences or physics course or ENS 100 **Corequisite(s):** GEO 303L **ISP:** ENS

GEO 305 - Global Biogeochemical Cycles

Course Units: 1.0 Biology, geology and chemistry are intricately linked to form the world around us. Biogeochemical cycles set the stage for life on Earth. This course explores the carbon, nitrogen, water, phosphorus, and sulfur cycles in the critical zone and oceans. The critical zone is the terrestrial layer that extends from the bedrock to the top of vegetation, and this course continues into estuaries and the open ocean. We investigate how biological (e.g., primary production, respiration), anthropogenic (e.g., urbanization, pollution) and geological processes (e.g., tectonics, rock weathering) influence the critical zone and oceans, and in turn how these cycles influence life and climate. Field studies focus on tropical marine biogeochemistry of coral reefs, mangrove forests, seagrass meadows, lagoons and estuaries. Course includes a required week-long field trip to a remote field station in Panama. There are additional costs associated with field trip expenses, but students can apply for travel assistance. All students must meet basic term

abroad requirements and submit an application. This course is open to all students, but preference will be given to those with a declared major in geosciences, environmental science, chemistry, or biology. **Cross-Listed:** BIO 235 **Corequisite(s):** GEO 305L **Prereq/Corequisite(s):** Take a course from either BIO, CHM, GEO or ENS 100 . **CC:** WAC, WAC-R **ISP:** ENS

GEO 355T - Living on the Edge

Course Units: 1.0 This course is a mini-term abroad. The field study of earthquakes, volcanoes, glaciers, and other hazards where tectonic plates collide and mountains form. Field studies focus on understanding the science behind geologic hazards that lead to catastrophic events and subsequent loss of life. Fieldwork is aimed at recognizing hazards, understanding the processes behind the hazards, and to see the role that society plays in mitigating these hazards. The study area alternates around the Pacific Rim between locations that include Peru (June), Alaska (June), and New Zealand (December). Fieldwork is preceded by organizational sessions on campus to prepare for field projects. **Prerequisite(s):** Any 100-level geosciences course or ENS 100 **ISP:** ENS

GEO 490 - Geosciences Independent Study 1

Course Units: 1.0 A program of independent study in a particular area of geology, not available through regular courses, under the supervision of a faculty member. **Prerequisite(s):** Permission of the instructor.

GEO 491 - Geosciences Independent Study 2

Course Units: 1.0 A program of independent study in a particular area of geology, not available through regular courses, under the supervision of a faculty member. **Prerequisite(s):** Permission of the instructor.

GEO 492 - Geosciences Independent Study 3

Course Units: 1.0 A program of independent study in a particular area of geology, not available through regular courses, under the supervision of a faculty member. **Prerequisite(s):** Permission of the instructor.

GEO 493 - Geosciences Independent Study 4

Course Units: 1.0 A program of independent study in a particular area of geology, not available through regular courses, under the supervision of a faculty member. **Prerequisite(s):** Permission of the instructor.

GEO 494 - Geosciences Independent Study 5

Course Units: 1.0 A program of independent study in a particular area of geology, not available through regular courses, under the supervision of a faculty member. **Prerequisite(s):** Permission of the instructor.

GEO 495 - Geosciences Thesis Research 1

Course Units: 0.0 Geological research under the direction of a faculty member. A minimum of two terms are required for honors. Only one term can be counted toward the two geosciences electives. **Prerequisite(s):** Permission of the instructor. **CC:** WS (satisfied by completion of GEO 496)

GEO 496 - Geosciences Thesis Research 2

Course Units: 2.0 **(TBD: Staff)** Geological research under the direction of a faculty member. A minimum of two terms are required for honors. Only one term can be counted toward the two geosciences electives. **Prerequisite(s):** Permission of the instructor. **CC:** WS

GEO 497 - Geosciences Thesis Research 3

Course Units: 1.0 Geological research under the direction of a faculty member. A minimum of two terms are required for honors. Only one term can be counted toward the two geosciences electives. **Prerequisite(s):** Permission of the instructor. **CC:** WS (satisfied by completion of GEO 496)

GEO 498 - Geosciences Research and Writing

Course Units: 1.0 One term of geological research under the direction of a faculty member. **Prerequisite(s):** Permission of the instructor. **CC:** WS

ENS 100 - Introduction to Environmental Studies

Course Units: 1.0 An introduction to environmental studies from a scientific, policy, and engineering perspective. This course covers human-environment interactions, with a focus on the impacts of human activities on natural systems such as climate, air, water, and species diversity and the ensuing environmental injustice. The course discusses sustainable solutions for how we can build systems that will support billions of humans and the natural world. Fieldwork during lab periods involves the investigation of local environmental problems and solutions. This course is intended for first- and second-year Environmental Science and Environmental Policy majors, but it is open to all students. **Corequisite(s):** ENS 100L **CC:** SCLB, GNPS **ISP:** ENS, STS

ENS 204 - Geographic Information Systems

Course Units: 1.0 An introduction to Geographic Information Systems (GIS) technology and its practical uses. Topics include history of GIS, geographic data types, primary data structures, system design, map coordinate systems, data sources, metadata, census data, geographic coding and address matching, digitizing, remote sensing imagery, measures of data quality, and needs assessment. An emphasis will be on hands-on instruction using GIS software (ArcView). Students will work with ArcView throughout the term to complete assignments and a class project. Focus areas include archeology, electric and gas utilities, surveying, health and human services, insurance, law enforcement and criminal justice, media and telecommunications, transportation, water and wastewater, and natural resources. The ultimate goal is to use the spatial component of data in conducting analysis and making decisions. **Prerequisite(s):** A good background in the use of modern computer software. **Corequisite(s):** ENS 204L **CC:** SET, GETS **Lecture/Lab Hours** Two class hours and two lab hours weekly. **ISP:** ENS, STS

ENS 215 - Exploring Environmental Data

Course Units: 1.0 Understanding how the Earth and environment works requires the careful analysis and interpretation of scientific data. Increasingly, the limitations to our understanding lie not in the availability of data, but rather in our ability to analyze and find meaning in it. Deriving insight from environmental data, in particular large and complex datasets, requires new tools, methods, and ways of thinking. In this class we are going to learn how to code in the programming language R and use it to analyze environmental data in order to better understand the Earth's systems. This course will feature a hands-on classroom with programming and data analysis occurring interactively during the class. Students will learn how to analyze and visualize large datasets and how to write code, while also covering interesting components of environmental and Earth sciences. **Prerequisite(s):** Any SET or SCLB. **CC:** SCLB, QMR, GDQR **Lecture/Lab Hours** Weekly lab required. **ISP:** ENS

BIO 350T - Terrestrial Ecology of Australia

Course Units: **CC:** SET **ISP:** ENS

BIO 320 - Ecology w/lab

Course Units: 1.0 Organisms and their environment, population and community ecology, and the structure and integration of ecosystems will be discussed along with a focus on animal community ecology. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 320L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. **ISP:** ENS **Note:** There may be field trips requiring scheduling outside of normal class time.

BIO 352T - Marine Ecology of Australia

Course Units: 1 **CC:** SET **ISP:** ENS

CHM 231 - Organic Chemistry 1

Course Units: 1.0 A mechanistic approach to the chemistry of carbon compounds organized around the reactions of functional groups. We cover alkanes, cycloalkanes, alcohols, alkyl halides (nucleophilic substitution and elimination), alkenes (addition and elimination), alkynes, spectroscopy (IR and NMR) and computer molecular modeling. **Prerequisite(s):** CHM 102 or CHM 110H **Corequisite(s):** CHM 231L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

CHM 240 - Analytical Chemistry

Course Units: 1.0 A course that focuses on the quantitative analysis of samples. Classroom and laboratory emphasis on statistical treatment of data, classical and instrumental methods of chemical analysis, and chemical equilibrium. **Prerequisite(s):** CHM 231 **Corequisite(s):** CHM 240L **CC:** SCLB, WAC-R **Lecture/Lab Hours** Six lab hours each week. **ISP:** ENS

Of these, no more than one may be at the 100-level. Additional courses may be approved at the discretion of the department chair.

SENIOR SEMINAR (1)

GEO 405 - Geosciences Senior Seminar

Course Units: 1.0 Senior capstone course required of all geosciences majors that integrates concepts from all disciplines of geology and requires students to engage in scientific discussions. The course covers current developments in the geosciences as reported in the primary literature. Students will critically read, present, and discuss recently-published articles. Students will also give oral presentations of their original thesis research. To improve their presentation skills, students will do extensive peer review and self-assessment. **Prerequisite(s):** Geosciences major and senior standing **CC:** WS

ONE TO THREE-TERM SENIOR RESEARCH PROJECT

One-Term Option:

GEO 498 - Geosciences Research and Writing

Course Units: 1.0 One term of geological research under the direction of a faculty member. **Prerequisite(s):** Permission of the instructor. **CC:** WS

Two or Three Term Option:

GEO 495 - Geosciences Thesis Research 1

Course Units: 0.0 Geological research under the direction of a faculty member. A minimum of two terms are required for honors. Only one term can be counted toward the two geosciences electives. **Prerequisite(s):** Permission of the instructor. **CC:** WS (satisfied by completion of GEO 496)

GEO 496 - Geosciences Thesis Research 2

Course Units: 2.0 **(TBD: Staff)** Geological research under the direction of a faculty member. A minimum of two terms are required for honors. Only one term can be counted toward the two geosciences electives. **Prerequisite(s):** Permission of the instructor. **CC:** WS

GEO 497 - Geosciences Thesis Research 3

Course Units: 1.0 Geological research under the direction of a faculty member. A minimum of two terms are required for honors. Only one term can be counted toward the two geosciences electives. **Prerequisite(s):** Permission of the instructor. **CC:** WS (satisfied by completion of GEO 496)

GEOSCIENCE COGNATES

Also required are six courses in the following areas. GEO courses taken to fulfill cognates cannot also count as electives in the major. These should be discussed with your academic advisor in advance. We recommend MTH and CHM options for those interested in pursuing graduate studies.

Data Analysis, Programming, Statistics and Mathematics (2)

Any two courses numbered 100 or higher, or equivalent such as:

ENS 215 - Exploring Environmental Data

Course Units: 1.0 Understanding how the Earth and environment works requires the careful analysis and interpretation of scientific data. Increasingly, the limitations to our understanding lie not in the availability of data, but rather in our ability to analyze and find meaning in it. Deriving insight from environmental data, in particular large and complex datasets, requires new tools, methods, and ways of thinking. In this class we are going to learn how to code in the programming language R and use it to analyze environmental data in order to better understand the Earth's systems. This course will feature a hands-on classroom with programming and data analysis occurring interactively during the class. Students will learn how to analyze and visualize large datasets and how to write code, while also covering interesting components of environmental and Earth sciences. **Prerequisite(s):** Any SET or SCLB. **CC:** SCLB, QMR, GDQR **Lecture/Lab Hours** Weekly lab required. **ISP:** ENS

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed

an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 104 - Robots Rule! Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a robotics theme. Introduces students to algorithms, basic data structures, and programming techniques. Students will build and program robots, exploring mobility, navigation, sensing, and inter-robot communication. Additional class topics include: history of robotics, social and ethical issues, emotionally intelligent behavior and other current topics in robotics. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 105 - Game Development: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a computer games theme. Introduces students to algorithms, basic data structures, and programming techniques. Computer game development is used as an example application area and students implement their own games throughout the course. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area, focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 108 - Scientific Computing: Introduction to Computer Science

Course Units: 1.0 Computers are used as tools in analyzing and solving scientific problems as well as being embedded in many applications and experimental equipment used by today's scientists. This course is designed to introduce students to computer programming and problem solving through the use of Python. Python is a language commonly used by the scientific community, and we will focus on using it to address scientific problems, using extensions that facilitate scientific computing. CC: QMR, SET Note: A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

STA 164 - Strategies of Experimentation: Statistical Design and Analysis of Experiments

Course Units: 1.0 Experimentation is at the heart of the scientific method, both in the physical and social sciences. Not only do experiments validate or disprove existing hypotheses, but often unexpected results lead to the development of new hypotheses and new theoretical understanding. This course will focus on strategies to accelerate the scientific method when experimenting with multiple variables. Specific topics include design options, such as simple comparative experiments, factorials and fractional factorials, and response surface designs, as well as analysis methods such as graphical methods, analysis of variance, and regression models. **Prerequisite(s):** One of STA 104 ,STA 128 /MTH 128 , STA 264 , STA228/MTH 228 , MER 301, ECO 243, PSY 200 or permission from the Chair. **CC:** QMR **ISP:** ENS

STA 264 - Regression Analysis

Course Units: 1.0 Regression analysis is one of the most important and influential methods in statistics, finding application in virtually all disciplines, from business to healthcare to sociology to the hard sciences. This course will cover both the science of regression analysis - its underlying mathematical theory, as well as the art of its practical application. The course project will involve development of a regression model to fit a real data set. Lectures will be given primarily in matrix notation, i.e., using linear algebra. While the course will not be all-encompassing in itself due to time constraints, it would be good preparation for more advanced modeling courses involving data mining, machine learning, "Big Data", and so on. Prior understanding of statistical concepts is assumed **Prerequisite(s):** MTH 115 and one of STA 104 , ECO 243, STA 164 , PSY 200, MER 301 or permission from the Chair. **ISP:** ENS

PSY 200 - Statistical Methods in Psychology

Course Units: 1.0 The descriptive and inferential statistical procedures used by researchers to explain and analyze their results. Mean, variance, correlation, hypothesis testing using t-test, ANOVA, and nonparametric tests. **Prerequisite(s):** PSY 100 , PSY 210 / BIO 210 or (BIO 103 and BIO 104) **ISP:** ENS

MTH 105 - Differential Calculus with Precalculus

Course Units: 1.0 Differential calculus of functions of a single variable, supplemented with supporting precalculus. Limits, continuity, differentiation, and applications. **CC:** QMR **ISP:** ENS **Note:** Not intended for students with credits for MTH 059 ,MTH 110 , MTH 113 , MTH 110P or MTH 113P.

MTH 110 - Calculus 1: Differential Calculus

Course Units: 1.0 Differential calculus of functions of a single variable. Limits, continuity, differentiation, computational aspects of Maclaurin and Taylor polynomials and series, and applications. **Note:** Not intended for students who have passed MTH 059 ,MTH 105 , MTH 113 , MTH 110P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

GeoChemistry (2)

The following is required,

CHM 101 - Introductory Chemistry 1

Course Units: 1.0 This is an introductory course that focuses on atomic and molecular structure, chemical bonding, stoichiometry, aqueous chemical reactions, and the properties of gases, liquids, solids and solutions. **Prerequisite(s):** Not open to students who have scored 4 or 5 on the AP Chemistry Exam or who have completed CHM 110H . All students who wish to enroll in an introductory chemistry course must take a placement examination to determine the appropriate course. See Course Selection Guidelines for more information on placement. **Corequisite(s):** CHM 101L **CC:** SCLB **Lecture/Lab Hours** Three lab hours/week,6/10 weeks. **ISP:** ENS

And one of the following:

CHM 102 - Introductory Chemistry 2

Course Units: 1.0 A continuation of CHM 101 , focusing on thermodynamics, chemical kinetics, chemical equilibrium, acids and bases, electrochemistry, and an introduction to organic chemistry. **Prerequisite(s):** CHM 101 or placement via the placement exam. **Corequisite(s):** CHM 102L **Prereq/Corequisite(s):** Not open to students who have taken CHM 110H . **CC:** SCLB, GNPS **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

GEO 207 - Stable Isotopes in Environmental Science

Course Units: 1.0 Stable isotopes have become a fundamental tool in many biogeoscientific studies, from reconstructing past climates to tracking animal migration or unraveling foodwebs and even to study the origin of life on Earth and possibly other planets. This course highlights the applications of stable isotopes in biological, ecological, environmental, archeological, and geological studies. Students learn the fundamentals of stable isotope biogeochemistry in order to understand the uses and limitations of this tool. This course starts with an introduction to the fundamentals of stable isotope geochemistry and then moves on to applied topics such as paleoceanography and paleoclimatology proxies, hydrology, sediments and sedimentary rocks, biogeochemical cycling, the global carbon cycle, photosynthesis, metabolism, ecology, organic matter degradation, pollution, and more. **Prerequisite(s):** Any geosciences, biology, or chemistry course or ENS 100 , or permission of the instructor. **Corequisite(s):** GEO 207L **CC:** WAC, GDQR, GNPS **ISP:** ENS

GEO 302 - Geochemical Systems and Modeling

Course Units: 1.0 Investigation of the Earth as a chemical system and using chemical tools to understand geologic processes. Topics include origin of the elements, formation and differentiation of the Earth, igneous processes, radioactive isotopes and radiometric dating, and geochemistry of near-surface waters and the oceans. Work includes theory, sample collection, sample preparation, chemical analysis using in-house equipment, and computer modeling of

the using the acquired data. Includes readings and discussions of the contemporary geochemical literature. **Prerequisite(s):** CHM 101 or equivalent **Corequisite(s):** GEO 302L **ISP:** ENS

GEO 305 - Global Biogeochemical Cycles

Course Units: 1.0 Biology, geology and chemistry are intricately linked to form the world around us. Biogeochemical cycles set the stage for life on Earth. This course explores the carbon, nitrogen, water, phosphorus, and sulfur cycles in the critical zone and oceans. The critical zone is the terrestrial layer that extends from the bedrock to the top of vegetation, and this course continues into estuaries and the open ocean. We investigate how biological (e.g., primary production, respiration), anthropogenic (e.g., urbanization, pollution) and geological processes (e.g., tectonics, rock weathering) influence the critical zone and oceans, and in turn how these cycles influence life and climate. Field studies focus on tropical marine biogeochemistry of coral reefs, mangrove forests, seagrass meadows, lagoons and estuaries. Course includes a required week-long field trip to a remote field station in Panama. There are additional costs associated with field trip expenses, but students can apply for travel assistance. All students must meet basic term abroad requirements and submit an application. This course is open to all students, but preference will be given to those with a declared major in geosciences, environmental science, chemistry, or biology. **Cross-Listed:** BIO 235 **Corequisite(s):** GEO 305L **Prereq/Corequisite(s):** Take a course from either BIO, CHM, GEO or ENS 100 . **CC:** WAC, WAC-R **ISP:** ENS

Biology or Physics (2)

Two of the following courses are required (limit one GEO or GEO cross-listed course):

Any BIO or PHY courses numbered 100 or higher.

GEO 208 - Paleontology, Paleobiology, and Paleoecology

Course Units: 1.0 Nearly all species that have existed on Earth are now extinct and are only known through the fossil record. This course examines the evolution and history of life on Earth as interpreted from the fossil record. Topics include fossil preservation, taphonomy, ontogeny, diversity trajectories through geologic time, evolutionary mechanisms, extinction, paleobiology, paleoecology, and paleoclimate. Special emphasis will be placed on using fossils to interpret ancient environments as well as deciphering past climates. The course focuses on the fossil record of marine invertebrates, but major groups of vertebrates (such as dinosaurs) and plants are also covered. **Cross-Listed:** BIO 208 **Prerequisite(s):** Any geosciences or biology course or ENS 100 **Corequisite(s):** GEO 208L **CC:** SCLB **ISP:** ENS

GEO 303 - Earthquakes and the study of the Earth's Interior

Course Units: 1.0 In this course students will learn about the various geophysical methods used to probe the Earth's interior. With a heavy focus on earthquakes and seismology, the course explores the question of how we learn about the Earth beneath our feet. Through the hands-on use of modern geophysical field equipment we will explore the deep and shallow structure of the whole earth. We will learn about finding geological resources and about the physical explanations for plate tectonics. We will also examine how radioactivity and heat flow within the earth can tell us about our warming climate. A common thread throughout the course is computer modeling, data acquisition, signal processing and associated uncertainties. By the end of the course, students will have a familiarity with the differences between the many geophysical surveying methods and the different cases in which they could be employed. **Prerequisite(s):** Any 100-level geosciences or physics course or ENS 100 **Corequisite(s):** GEO 303L **ISP:** ENS

GEO 305 - Global Biogeochemical Cycles

Course Units: 1.0 Biology, geology and chemistry are intricately linked to form the world around us. Biogeochemical cycles set the stage for life on Earth. This course explores the carbon, nitrogen, water, phosphorus, and sulfur cycles in the critical zone and oceans. The critical zone is the terrestrial layer that extends from the bedrock to the top of vegetation, and this course continues into estuaries and the open ocean. We investigate how biological (e.g., primary production, respiration), anthropogenic (e.g., urbanization, pollution) and geological processes (e.g., tectonics, rock weathering) influence the critical zone and oceans, and in turn how these cycles influence life and climate. Field studies focus on tropical marine biogeochemistry of coral reefs, mangrove forests, seagrass meadows, lagoons and estuaries. Course includes a required week-long field trip to a remote field station in Panama. There are additional costs associated with field trip expenses, but students can apply for travel assistance. All students must meet basic term abroad requirements and submit an application. This course is open to all students, but preference will be given to those with a declared major in geosciences, environmental science, chemistry, or biology. **Cross-Listed:** BIO 235 **Corequisite(s):** GEO 305L **Prereq/Corequisite(s):** Take a course from either BIO, CHM, GEO or ENS 100 . **CC:** WAC, WAC-R **ISP:** ENS

Note: Advanced work or a minor is encourage in chemistry, physics, biology, mathematics, economics, or engineering.

Requirements for Honors in Geosciences:

The major requirements as specified above are required, as are the GPA requirements of Union College described elsewhere in this catalog. A senior research thesis is required, normally consisting of at least two terms of GEO 495 and GEO 496 (independent research with a faculty member) and presentation at Steinmetz Symposium or other conference as approved by the advisor. Interdepartmental majors must consult with their advisors in both disciplines during their junior year to receive approval for an interdepartmental thesis. The Geosciences component of an interdepartmental thesis will normally incorporate at least one term of geoscience research.

Additional Requirements

Senior Geosciences majors may not take any introductory course for major credit. A senior thesis is required, and theses may either be 1 term (GEO 498) or 2-3 terms (GEO 495, GEO 496, GEO 497). Only one senior level research credit may count toward the two geosciences electives. Students who intend on going to graduate school are strongly encouraged to do a research thesis and to take cognate courses in chemistry and math, because most graduate programs require them. A summer field course or independent research in the junior year is strongly recommended, particularly for those going on to graduate school or geological consulting work.

History

Chair: Professor A. Foroughi
Faculty: Professors S. Berk, J. Cramsie, J. Madancy, M. Walker; Associate Professors K. Aslakson, A. Foroughi A. Morris, B. Peterson; Assistant Professors S. Chattaopadhyay, E. McGrath, S. Kuersteiner; Visiting Assistant Professor N. de Silva
Staff: L. McGill (Administrative Assistant)

History (ID), B.A.

Requirements for the Interdepartmental Major:

Eight courses, including three courses in the core, one course each in two of the approved areas outside of the core, one pre-1700 course, one Inter-Continental Connections course, one 300-level course, and the 400-level seminar (to be

completed by the end of their junior year before beginning their senior project). The senior project may not count toward the field requirement.

Requirements for Honors in History:

To be eligible for departmental honors, a student must fulfill the following requirements: (1) a minimum index of 3.30 in history; (2) a grade of "A minus" or higher on the senior project; and (3) a grade of "distinction" or "high pass" in an oral examination based on the senior project. In addition, the student must satisfy College requirements for departmental honors.

Course Selection Guidelines:

Placement: We accept the following AP courses: World History, United States History, and European History. If the score is 4 or 5, then we assign credit for one of our introductory courses, HST 106 for World History, HST 102 for United States History, and HST 147 for European History, all of which will count towards the major.

Courses Suitable for Non-Majors: Although 300 and 400 level courses are designed with History majors and minors in mind, all History courses are suitable for non-majors.

Course Numbering: 300- and 400-level courses have as a prerequisite any 100- or 200-level course or permission of the instructor.

History Minor

Requirements for the History Minor:

Six history courses, including at least one 300-level course; at least three of the six must belong to one of the following core areas: Africa/Middle East, Asia, Europe, Latin America, or US.

History, B.A.

Requirements for the Major:

Twelve courses including the core and distribution requirement as follows:

- Four or five courses toward the core (The number depends on which core a student chooses.)
- At least one course on the period before 1700.
- One course approved under Inter-Continental Connections.
- Two-300 level courses.
- One-400 level seminar.
- Two-term senior project.

Students will choose a core of Africa/Middle East, Asia, Europe, Latin America, US, Public History, or a thematic concentration. Examples of thematic concentrations include "Africana," "Women and Gender," "Revolution," "Empires," etc. In close cooperation with their advisors, history majors will select the courses for a thematic concentration and submit their proposal to the Department Chair for written approval by the start of Winter Term of the Junior year. If students select a US, European, or Public History core, they must complete at least four courses in US, European, or Public History, respectively. If they select Africa/Middle East, Asia, or Latin America, they must complete either (1) four courses in the respective field, or (2) at least three history courses in the core geographical area they have chosen, along with at least two other approved courses in relevant interdisciplinary programs, such as Africana Studies, Asian Studies, and Latin American Studies. These are generally not language courses. Students may count no more than five 100-level courses toward the major.

Pre-1700 Approved Courses:

Topics on United States:

HST 113 - The Origins of American Society

Course Units: 1.0 The evolution of American society from its 17th-century origins through the aftermath of the Revolution. **CC:** SOCS **ISP:** AMS

HST 131 - African-American History 1

Course Units: 1.0 The purpose of this course is to help you better understand both the role of race and slavery in early American history and the contributions of African-Americans to society and culture in America before 1877. The course will examine the lives of black Americans, enslaved and free, from the arrival of the first Africans in the New World through Reconstruction. It will also address more abstract ideas about cultural and "racial" differences. Throughout this course, you will be asked to consider the question "which came first, racism or slavery?" **CC:** LCC, SOCS **ISP:** AFR, AMS

Topics on Europe:

HST 140 - History Done Digitally

Course Units: 1 What do you think of when you hear "Humanities"? If you ask someone who works in the humanities what they study, you may hear a hundred different answers: great authors like Chaucer, established historians such as Geoffrey of Monmouth, fantastic works of art such as Myron's Discobolus. You seldom will hear "Data." But that is exactly what all of these great works of literature, history, and art are. Once we make that recognition, a new world opens up. In the modern world, countless tools have been developed to facilitate the access, analysis, and dissemination of data. In this course, we will learn how to use computing technologies (e.g. Voyant Tools, OpenRefine, ArcGIS StoryMaps etc.) to both ask questions that are traditional to the humanities and come up with new questions enabled by the use of these technologies, as well as how technology can make our findings more accessible and understandable. **Cross-Listed:** CLS-193 **CC:** HUM, QMR, SOCS, GDQR

HST 141 - The Bright Ages: Medieval Europe from c. 500 CE to c. 1450 CE

Course Units: 1.0 In the popular imagination, the medieval history of Europe often appears as a narrative of decline ("Fall of Rome") and darkness(Dark Ages) followed by gradual betterment (Renaissance) and progress (Scientific Revolution, Enlightenment, Democracy). This class provides you with the critical and analytical tools to understand

why this particular vision of medieval Europe came into being and how to develop a historical understanding of the past, present, and future. We begin our semester at the fringes of Europe, in fifth-century norther Africa, after the sack of Rome in 410 where we analyze Augustine's sermons and his use of the olive press as a metaphor for the sack. Who were the first monks and saints in Late Antiquity and why would anyone convert to Christianity? In the seventh century, you may be astonished to learn that women had significant power as queens, positions they could and would have maintained throughout the medieval period. In the eleventh- to thirteenth centuries, Mediterranean traders moved goods across the seas at the same time as wars - most famously the Crusades - were fought inside and outside Europe. Francis of Assisi, however, took a vow of poverty and become the leader of a movement that offered a serious alternative to what we call capitalism today. Why did society go for one and not the other alternative? We will then study the lives of slaves, farmers, mystics, and a businesswoman. How did they shape medieval European history? Toward the end of the semester, we will take a "reflective break" with Norbert Elias to ask what European civilization is and what Elias understood by the Civilizing Process. He will provide us with the analytical tool historicize the very notion of civilization. We leave the medieval world with Christine de Pizan who built the City of Ladies (1405) and with the Portuguese who began to conquer the Indies and Americas by the mid fifteenth century. In this class, alongside acquiring research and writing skills that are valuable in almost all areas of intellectual endeavor, you will be introduced to the most important events and narratives of medieval European history. Because medieval history is both excitingly different from our present but also often similar, studying this history is also a unique challenging and excellent exercise in abstract and critical thought. **CC:** SOCS **ISP:** REL

HST 142 - Renaissance and Reformation 1450-1600

Course Units: 1.0 In 1450, Europe was the poor and insignificant western end of the Eurasian landmass. By contrast, the world's mightiest empires, wealthiest economies, and most innovative and imaginative cultures stretched from the Persian Middle East across the lands of the Mughals to Ming China. The fantastic wealth of 'the East' tantalized Europeans as its commodities arrived via the Silk Road along with the stories of travelers. Asia's phenomenal riches taunted Europeans. Its mighty empires fired Western rulers' dreams of power at home and wealth abroad. By the early 1600s, European states like the Dutch Republic had laid the foundations for an eighteenth-century revolution in global political and economic power. What happened in Renaissance and Reformation Europe that paved the way for this revolution? This course will examine critical transformations in the social, economic, political, religious, cultural and intellectual, and environmental history of early-modern Europe between 1450 and 1600. Topics include the Italian and northern European Renaissances, the emergence of Humanism, the development of Renaissance monarchies and nation-states, religious reformations and conflicts, and the first stages of European imperialism in the Atlantic and Indian Oceans. **CC:** SOCS

HST 144 - Global Medieval World

Course Units: 1 This class takes you on a journey through the global medieval world examining connections and comparisons among societies across political boundaries and geographies, boundaries of language and religion, and at the intersection of various economic systems. Over a period of 1000 years, we will explore peoples of Mesoamerica, North and sub-Saharan Africa, the Mediterranean basin, western and eastern Europe, the Middle East, Central Asia, the Indian subcontinent (and Indian Ocean), East Asia and Oceania. **CC:** SOCS **ISP:** AFR, AIS, REL

HST 145 - Early Modern Europe

Course Units: 1.0 European society from the seventeenth century through the Enlightenment, stressing social, economic, institutional, and intellectual developments. **CC:** SOCS

HST 161 - The Peoples of Britain

Course Units: 1.0 Images of royalty, Wimbledon, fish and chips, or 'Rule Britannia' sometimes come to mind when we think of Britain. Typically, England has received disproportionate attention in histories despite the fact that four 'nations' have existed within the geographical bounds of the 'British Isles' (Ireland, Wales, Scotland, England) and

many peoples have found their way to those islands: Celts, Romans, Angles, Saxons, Jutes, Danes, Norse, Normans, Afro-Caribbeans, Southeast Asians, peoples of South Asia, Africa, and the Middle East. This introductory course explores the remarkable interactions among these people who defined the British Isles from the first settlements right through to the present. Upon completion of this course you will have obtained a working knowledge of British History from which to explore the subject in more depth and also be able to demonstrate understanding and appreciation of cultural complexity through the cross-cultural comparisons made in the course. **CC:** LCC, SOCS

HST 195 - From Abraham to Mohamed and Beyond: The Early History of the Jews

Course Units: 1.0 History of the Jewish people in its first 1600 years from tribal beginnings to the destruction of the second Commonwealth. **CC:** SOCS **ISP:** REL

HST 239 - Modern Extremism & Medieval World

Course Units: 1 Whether through movies, video games, or novels, modern society has maintained a longstanding fascination with the world of the European Middle Ages. Yet, as Viking symbols and Crusader slogans used by marchers during the 2017 Unite the Right rally in Charlottesville, VA demonstrated, this period's history has also been used to grow white nationalist movements and spark division. Through studying medieval texts, art, and literature, this course equips you to better understand the historical context behind uses and abuses of medieval culture in popular media and extremist propaganda. **CC:** JCHF, WAC-R **ISP:** REL, STS

HST 240 - The Crusades: Christianity and Islam in Conflict

Course Units: 1.0 The conquest of Jerusalem and the Holy Land by knights from western Europe and the response of the region's Muslims, 1096-1291. Special attention is given to the development of a crusading spirit and its corruption under the influence of religious, political, and economic expediency and personal greed. **CC:** SOCS **ISP:** REL

HST 241 - Mystics, Magic, and Witchcraft in Medieval and Early Modern Europe

Course Units: 1.0 A survey of learned and popular beliefs about the influence of supernatural and occult powers on individuals and society. **CC:** SOCS **ISP:** REL

HST 245 - Occult Sciences and Societies

Course Units: 1.0 Surveys the rise of occult sciences, such as ritual magic, astrology, and alchemy, and the influence of real and imagined secret societies dedicated to the preservation and transmission of such esoteric knowledge. Examines the legends associated with the suppression of the Templars in fourteenth-century France, and the revival of Platonism, Jewish Kabbalah, and pseudo-Egyptian Hermeticism in Renaissance Italy. Considers the dissemination of such ideas throughout early-modern Europe, the alchemical theories of Paracelsus and Isaac Newton, and the imagined societies of esoteric utopias. Concludes with the rise of Rosicrucianism, Freemasonry, and the Bavarian Illuminati and their possible influence on the French Revolution. **CC:** SOCS **ISP:** REL

HST 246 - Prehistory of Risk

Course Units: 1 This class looks at how European society tried to tame chance and comprehend its whims before and after the arrival of the mathematics of probability around 1650. How did people move from consulting oracles to developing the insurance business? Risk is examined as a historically shaped experience in various areas of its manifestations including oracles, gambling, insurance, philosophy, and theology. **ISP:** AMS

HST 261 - Medieval Britain 1000-1509

Course Units: 1.0 Britain in 1000: England was divided and the Anglo-Saxons were in a fight for survival with the Norse, the kingdom of Scots was an ill-formed hodgepodge of Gaels, Celts, Picts, Saxons, and Norse, and in the West the Cymry, the peoples of Wales, clung fiercely to their identity as the original Celtic inhabitants of Britain. In the decades after the famous Norman conquest of 1066, Britain became part of a vast French-speaking Empire. Which peoples and nations would survive, thrive, and achieve supremacy on the island of Britain? This question is examined by analyzing the Scottish wars of independence, the Hundred Years War with France, the great dynastic struggles of the English Wars of the Roses, the notorious reputation of Richard III and the rise of the Tudors, and the triumph of the Stewart kings in Scotland. **CC:** LCC, SOCS

HST 262 - The Age of Henry VIII

Course Units: 1.0 Remarkable women and men made history in Britain during the Age of Henry VIII: six wives (Catherine, Anne, Jane, Anne, Catherine and Katherine), faithful and far from saintly servants like Cardinal Wolsey, Thomas More, and Thomas Cromwell, and an evangelical boy destined to become Edward VI. This was an age of personal monarchy, patriarchy, and the rule of wealthy elites, but these figures travelled paths and pursued policies that changed the way every person lived. They nurtured and unleashed religious passions that divided generations and whole peoples from one another, and hundreds - eventually thousands - died at the hands of those who believed they had a monopoly on spiritual truth. This course analyzes the imperial ambitions of Henry VIII and Edward VI in Britain and Ireland, the brutal dynastic and religious politics of the period, and the all-out assault on the traditional faith in the Tudor dominions. **CC:** SOCS

HST 263 - The Tudor and Stewart Queens

Course Units: 1.0 The radical Protestant John Knox published a tract in 1558 denouncing what he called the 'monstrous regiment of women'. He had in mind three women who dominated the political scene: Queen Mary I of England (Henry VIII's Catholic daughter) Marie of Guise (widow and queen regent of the deceased James V of Scotland); and young Mary Queen of Scots, betrothed to the future king of Catholic France. Knox had the spectacularly bad luck to publish his attack on queenship at the moment when Mary I died and her Protestant sister Elizabeth ascended the throne, a queen mighty in defense of her authority and with a temper to match her illustrious father Henry VIII. These women defined British History after 1550. Looking back on these years, Francis Bacon wrote of the 'strange perturbations' of England, having been ruled by a boy king (Edward VI) and two women before finally again seeing on the throne a proper adult male, James VI of Scotland - with nice irony, Mary Queen of Scots' son. This course explores the lives of these Tudor and Stewart queens and analyzes the intersections of gender, authority, and religious zeal that defined their age. **CC:** SOCS **ISP:** GSW

HST 264 - The Stuart Wars 1603-1660

Course Units: 1.0 In 1603, James VI of Scotland became the first king to rule all of Britain and Ireland, when he added Elizabeth I's crown to his own. This was the first in a series of remarkable revolutions examined in this course. James successfully consolidated this new Stuart imperium in England, Wales, and Scotland. The Protestant plantations in Ulster created the origins of the modern-day troubles in Northern Ireland. Settlements in the Americas inaugurated a British Atlantic Empire built on sugar and tobacco, slavery and a British diaspora. James passed to his successor Charles I a dangerous ideology of imperial kingship that asserted the crown's unchallenged authority over all matters spiritual and temporal. When Charles attempted to make good on that ideology in his religiously and ethnically diverse kingdoms, the result was war, wars that eventually cost the king his head. For the first and only time, a British king was tried and executed for committing tyranny, the monarchy abolished, and a republic created. Inspired by the message of radical social justice in the Bible, English men and women demanded freedom and equality in these years. **CC:** LCC, SOCS

HST 461 - Seminar in European History: Discovery of Britain and Ireland

Course Units: 1.0 The broad topic of this seminar is the 'discovery' of early-modern Britain and Ireland by its own people. When we think of discovery in the early modern period, what comes to mind are often images of intrepid explorers pushing the boundaries of geography and scientific knowledge, merchants eager to tap the exotic wealth of 'the East', or religious fanatics bent on the conquest of bodies and souls in the Americas. Yet for the peoples of Britain and Ireland, their own islands were an undiscovered country in 1500. Only a tiny number of people could claim to have seen some or all of the country outside their own valley or village. By contrast, travel and tourism were commonplace in Britain and Ireland by 1800. What was the experience like for those British and Irish men and women who explored the undiscovered country at home in the three hundred years between? What did they have to say about the people and places they encountered? How did their works "construct" their fellow inhabitants? In this seminar you will learn methods of inquiry that can be applied to answer such questions, conduct original research using early-printed books and manuscript travel narratives, and complete a research paper of your findings. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS, WAC, WAC-R

Topics on Asia:

HST 181 - Confucians and Conquerors: East Asian Traditions

Course Units: 1.0 An overview of the traditional civilizations of China, Japan, and Korea, focusing on the emergence and development of ideologies, institutions, and social patterns up to 1800. Special emphasis on fostering an appreciation for the richness and complexity of each individual society. **CC:** LCC, SOCS **ISP:** AIS

HST 282 - The Mongols: Terror, Trade and Tolerance

Course Units: 1.0 This course explores the rise, fall, and memory of the great Mongol empire. Students will read not only about the Mongols themselves, but also about the many cultures and countries that the Mongols conquered, and we will analyze those fraught cross-cultural encounters through primary and secondary source materials. We will also look at how the overwhelmingly negative portrayal of the Mongols has evolved over time, and students will look at the way Genghis Khan is depicted in films and monuments. **CC:** LCC, SOCS **ISP:** AIS, REE

HST 284 - Hobbled and Heroic: Women in China and Japan

Course Units: 1.0 A comparative look at how the societies of China and Japan shaped the various roles assumed by women in these two cultures, as well as the evolution of those roles over time. **CC:** LCC, SOCS **ISP:** AIS, GSWS

HST 285 - The Samurai: Lives, Loves, and Legacies

Course Units: 1.0 This course explores the evolution of the samurai as a caste, their military and family lives, their passions, and their symbolic meaning to Japanese and to others. We will be reading first-hand accounts written by samurai men and women, viewing a number of well-known and lesser-known samurai films, and looking at how the realities of samurai life compare with the many meanings the samurai have acquired over the centuries. **CC:** LCC, SOCS **ISP:** AIS

Topics on Latin America:

HST 171 - Europe, Africa, and the Americas in the Era of Columbus

Course Units: 1.0 A study of the relationship of Spain and Portugal with Africa, Asia, and the Americas from the early fifteenth through the late eighteenth centuries. The course examines the early civilizations of Africa, Europe, and the Americas in the era before the voyage of Columbus and the interaction among these three worlds in the centuries after the Encounter. It concludes with an examination of the cultural legacy of Africa and Europe on the indigenous societies of the Americas and the subsequent development of multicultural and multiracial independent nations. The central role of gender relations between the civilizations, the gendered conflict that characterized the era of exploration, and the role of masculinity are all examined. **CC:** LCC, SOCS **ISP:** GSWS, LAS, REL

HST 271 - History of Mexico

Course Units: 1.0 Mexican civilization from its origins to the present - ancient Maya and Aztec cultures; the Spanish conquest; colonial society; the independence wars; Mexico in the nineteenth and twentieth centuries, especially the Mexican Revolution; and current cultural, social, and economic issues, including the Zapatista rebellion, NAFTA, and the changing nature of the borderlands region between Mexico and the USA. **CC:** LCC, SOCS **ISP:** LAS

Topics on Africa/Middle East:

HST 107 - Africa to 1800

Course Units: 1.0 This course explores the history of Africa from the beginnings of humanity through the period of the trans-Atlantic slave trade. In it, we will examine political, social, economic and cultural changes in Africa, with particular focus on the relationships between local communities and the political elites who sought to rule them. This perspective will enable us to focus on the social dynamics of African communities and the daily activities of ordinary Africans, as well as on the political intrigues and roles of kings, chiefs, and merchants. **CC:** LCC, SOCS

HST 190 - Islamic World in the Pre-Modern Era ca. 600 CE - 1700 CE

Course Units: 1 Islamic societies and cultures span the world. For centuries, Islam has been a force in global history, shaping political and economic systems, advancing forms of knowledge, and contributing to the cultural diversity of the modern world. This survey course provides an introduction to the history of the Islamic world during the modern era. Students will encounter very diverse Muslim societies by exploring the history of Islam in different regional and temporal settings. **CC:** SOCS, JCHF **ISP:** REL

Other:

HST 105 - Comparative Global History to 1800

Course Units: 1.0 Provides a "bird's-eye" view of human history from the emergence of human "civilization" in the Fertile Crescent to the European conquest of the Americas. Surveys the comparative development of the world's continents, regions, and empires and investigates how expansion of the "human web" facilitated both cooperation and conflict among the world's peoples. Pays particular attention to environmental and ecological determinism, the influence of technology on economic growth, the rise of "portable" religions, and the interaction of culture and politics. **CC:** LCC, SOCS **ISP:** REE

HST 138 - Big History

Course Units: 1.0 An exploration of the past from the big bang to the present, dividing the history of the universe, earth, life, and humanity into periods using very large scales of time. **CC:** SOCS, GCHF **ISP:** ENS, STS

Inter-Continental Connections Approved Courses:

HST 105 - Comparative Global History to 1800

Course Units: 1.0 Provides a "bird's-eye" view of human history from the emergence of human "civilization" in the Fertile Crescent to the European conquest of the Americas. Surveys the comparative development of the world's continents, regions, and empires and investigates how expansion of the "human web" facilitated both cooperation and conflict among the world's peoples. Pays particular attention to environmental and ecological determinism, the influence of technology on economic growth, the rise of "portable" religions, and the interaction of culture and politics. **CC:** LCC, SOCS **ISP:** REE

HST 106 - Comparative Global History from 1800

Course Units: 1.0 This course examines the broad themes in world history from the 19th century onwards, beginning with the rise of the nation-state and the expansion of European and subsequently Japanese imperialism. It looks at the indigenous and global response to colonialism, the impulse of nationalism and the quest for modernity, as well as how race and gender came to be rethought and reconfigured going into the 20th century. We will examine the impact of the two world wars, the process of decolonization, the Cold War and the rise of globalization in the late 20th century. **CC:** SOCS **ISP:** REE

HST 108 - Africa since 1800

Course Units: 1.0 This course is a survey of the African continent from 1800 to present. In this course, we will examine the political, social, economic and cultural changes in Africa during the nineteenth and twentieth centuries. Focus will be on key themes that span much of African history during this period including: slavery and the slave trade, European conquest and African resistance, the expansion of world religions (Islam and Christianity) in Africa, colonialism, the growth of nationalism, decolonization and the emergence of independent postcolonial states, and the challenges facing contemporary African states related to political instability and economic development. Given the enormous breadth and diversity of Africa, this course explores these themes by focusing on certain case study regions and countries, such as Francophone West Africa, Nigeria, the Congo region (Zaire), the East African coast and Arabic-speaking North Africa. **CC:** LCC, SOCS **ISP:** AFR

HST 109 - History of Sustainability

Course Units: 1.0 Sustainability. You now find the word just about everywhere. For more than a few people it has become the defining mission of their generation, an existential challenge that must be met for the survival of humanity. This is a course in thematic global history that explores the concept of sustainability from an historical perspective. Sustainability is not a new thing in human history or just a consequence of our environmentally-challenged present. Sustainability is part of our cultural inheritance with deep roots in the histories of Asia, the Americas, Europe, and Africa. Also, sustainability is not simply synonymous with environmentalism or climate change. It has always encompassed social realities like power, trade and commerce, cultural identities, human relationships to science and technology, and much more. Sustainability is a history of the societies we create and the values that define them, for good or ill. Ultimately, the history of sustainability is an opportunity to reflect on the nature of our humanity and the ideals that empower a just future. We will explore sustainability's history through primary texts, analyses of the concept across time and space, the study of sustainability challenges - successes and failures - in past societies, and contemporary realties faced by peoples across the globe, whether in the megacities of China and Latin America or the urban gardens of Detroit and the green housing cooperatives of Berlin. **CC:** LCC, SOCS, GCHF **ISP:** ENS

HST 113 - The Origins of American Society

Course Units: 1.0 The evolution of American society from its 17th-century origins through the aftermath of the Revolution. **CC:** SOCS **ISP:** AMS

HST 135 - Latinos In/As U.S. History

Course Units: 1.0 What does U.S. history look like if we consider it a Latin American nation? This course explores the history of El Norte through the eyes of border-crossing, indigenous communities, Spanish settlers in the South and West, and the Latin American and Caribbean immigrant populations that have made their homes across the country since its founding. We end with a particular focus on Latin American and Latinx communities in 21st-century New York. **CC:** SOCS **ISP:** AFR, AMS, GSW, LAS

HST 138 - Big History

Course Units: 1.0 An exploration of the past from the big bang to the present, dividing the history of the universe, earth, life, and humanity into periods using very large scales of time. **CC:** SOCS, GCHF **ISP:** ENS, STS

HST 144 - Global Medieval World

Course Units: 1 This class takes you on a journey through the global medieval world examining connections and comparisons among societies across political boundaries and geographies, boundaries of language and religion, and at the intersection of various economic systems. Over a period of 1000 years, we will explore peoples of Mesoamerica, North and sub-Saharan Africa, the Mediterranean basin, western and eastern Europe, the Middle East, Central Asia, the Indian subcontinent (and Indian Ocean), East Asia and Oceania. **CC:** SOCS **ISP:** AFR, AIS, REL

HST 171 - Europe, Africa, and the Americas in the Era of Columbus

Course Units: 1.0 A study of the relationship of Spain and Portugal with Africa, Asia, and the Americas from the early fifteenth through the late eighteenth centuries. The course examines the early civilizations of Africa, Europe, and the Americas in the era before the voyage of Columbus and the interaction among these three worlds in the centuries after the Encounter. It concludes with an examination of the cultural legacy of Africa and Europe on the indigenous societies of the Americas and the subsequent development of multicultural and multiracial independent nations. The central role of gender relations between the civilizations, the gendered conflict that characterized the era of exploration, and the role of masculinity are all examined. **CC:** LCC, SOCS **ISP:** GSWS, LAS, REL

HST 172 - Reform and Revolution in Latin America and the Caribbean

Course Units: 1.0 Examines the political and social changes in Latin America as a result of the nineteenth and twentieth century reform and revolutionary movements, including the Unidad Popular government in Chile under Salvador Allende and its overthrow by General Pinochet and the subsequent dictatorial rule. The effect of the 1959 Cuban Revolution on Latin America; the revolutionary uprisings in Central America, in Chiapas, Mexico, and against the military government of Argentina form other key areas of examination. The course places special emphasis on the intersection of gender, race and class conflicts and movements, with particular attention to the role of emerging feminist movements. **CC:** LCC, SOCS **ISP:** AFR, GSW, LAS

HST 173 - History of the Caribbean and Central America

Course Units: 1.0 This course covers the history of the Caribbean and Central America from pre-colonial times to the present. It includes a survey of the impact of both extinct and enduring indigenous cultures, the rivalries among Spanish, Dutch, French, and British powers for control of the Caribbean, and the history of slavery, the plantation system, rebellions and revolutions against enslavement, colonialism, and modern imperialism. The course ends with the early 21st-century struggles for self-determinism among the nations of the region. **CC:** LCC, SOCS **ISP:** AFR, LAS

HST 204 - Wine: A Global History

Course Units: 1.0 Global History ls the most important field in History today. This thematic course in comparative global history uses an essential foodstuff in human history to weave together societies and peoples across time, space, and geography: grapes, in this case the empire of viticulture (wine-making). There are great stories of human history to be told using wine. Its history is a global environmental history: the spread, retreat, and reintroduction of wine across climate zones and distinctive terroir worldwide. Vineyards also record the natural history of grapes and their evolution, the battles with disease and infestation, the chemical processes of wine-making, the impact of technology, and the biochemical and sensory effects of color, texture, taste, and intoxication. The history of wine is also a history of empire, trade, and power. The Spanish conquest of the Americas brought with it Christianity, expropriation, and viticulture. Today migrant laborers from Mexico and Latin America harvest the grapes that find their way from Washington, Oregon, and California as wine. The commercial history of wine is thus a history of labor and social justice as old as

time. Wine also records spiritual and aesthetic journeys through human history. And it is a window into today's existential challenges of sustainability and climate change. This course teaches foundational concepts in global history and introductory research skills through which students have the opportunity to complete a guided research project. **CC:** LCC, SOCS, WAC

HST 205 - Clash of Civilizations?

Course Units: 1.0 Are we living through a clash of civilizations? East vs West? Christianity vs Islam? Or is this too simple-minded a way to think about human history? Indeed it is. Simple-minded ideas like the clash of civilizations are not only bad history they betray the need for human understanding in our complex world. This course explores something fundamental to the human experience: the encounters, interactions, and exchanges (for good or bad) of diverse peoples and societies across time and space. We will explore four historic meeting places: Marseille and the south of France in the Classical Greco-Roman Mediterranean; the crossroads of faiths and empires that was early-modern Jerusalem; the Native American and European middle ground of the Great Lakes and the world of the Voyageurs; the hip, historic, and dynamic scene that is modern multicultural Berlin. This is a thematic course in comparative global history; it also teaches research skills and includes the opportunity for you to develop your own guided research on modern Berlin. **CC:** LCC, SOCS

HST 219 - Revolutions in the Global South

Course Units: 1.0 Across human history in the modern age, revolutionary processes have defined politics, culture, and economic systems. They have erupted in virtually every part of the world, spread from region to region, and led to dramatic changes. Most often scholars and students have focused on revolutions in the Western world. However, this transnational and thematic course will explore the history of revolutions and revolutionaries in the global South, or the "Third World" as it was commonly known. Drawing on secondary and primary sources, students will learn about a wide variety of revolutions in Africa, Asia, and the Caribbean, ranging from anti-colonial revolts, revolutionary socialist states, opposition politics, and various movements focused on environmentalism, feminism, and indigenous rights. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AFR

HST 224 - Transnational America

Course Units: 1.0 The United States is now the center of global production, yet it is also swept by the forces of international cultural change. How did we reach that position and what consequences does it have for our national integrity, our identity as Americans, our way of life, and our relationship to other nations and peoples? Students read recent literature on the history of transnationality and globalism as it has affected the economy, ethnic identity, cultural production (in literature and film), and international relations of the United States in the twentieth century. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AMS

HST 257 - Modern France and Its Empire

Course Units: 1.0 In this course, we will examine the political, social, economic and cultural history of modem France and its empire since 1789. We will explore the history of France within wider transnational and imperial contexts, as well as in its post-colonial era, when immigration and cultural difference have emerged as central issues within France itself. Through lectures, discussions, novels, memoirs, and films, we will seek to understand the history of modern France as both a nation-state and empire. In particular, we will also look at the colonial and post-colonial histories of francophone West and North African countries. **CC:** SOCS, LCC **ISP:** AFR

HST 270 - History of Latin American Popular Culture

Course Units: 1.0 This course examines the history of Latin America and the Caribbean in the 19th and 20th centuries. Our "texts" for this course are novels, political cartoons, movies, TV shows and music, along with traditional history

books. The course seeks to examine the way that Latin American societies have depicted themselves in the popular media, the way that the United States has viewed and absorbed Latin American culture, and the ways that historians have sought to explain the transformations in various countries by examining popular culture. Since Latin American and Caribbean cultures are so closely linked to the United States, and because an increasing number of U.S. citizens are of Latino descent, this course offers valuable insights into the transformations occurring in US culture. **CC:** LCC, SOCS **ISP:** AFR, LAS

HST 275 - United States Foreign Relations and Modern Latin America

Course Units: 1.0 This course is about relationships, exchanges, and tensions among the people and nations of the Americas from the mid 19th century to the present. The most powerful foreign influence (political and otherwise) in Latin America has consistently been the US, often with quite negative consequences. In the 21st century relations between the US and Latin America have changed dramatically. China has replaced the US as the most important trading partner for several countries, particularly Brazil, the largest economy of Latin America. In addition, the US is experiencing a demographic transformation with an increasing number of immigrants from Latin America making up the populations of just about every state. The history of the US and Latin American is increasingly a "shared" history. In this course we will look at interconnections, comparisons, and the common links between Latin America and the US in what is now a history of both foreign and domestic relations. **CC:** LCC, SOCS **ISP:** LAS

HST 289 - Global Indians: South Asian Identity in the United States

Course Units: 1.0 The Indian diaspora today constitutes an important, and in some respects a unique force, in world culture and in the United States. We will begin by studying Indians migrating worldwide through the nineteenth and twentieth centuries with a focus on the United States to pose critical questions about identity, race, religion, gender, cultural assimilation and change. **CC:** LCC, SOCS **ISP:** AMS

HST 302 - Comparing Muslim Cultures

Course Units: 1.0 This course explores the history of Islam in diverse regional and temporal settings. It explores the unity of Islam, through an examination of the early history of the religion and its founding texts and tenets. However, the main emphasis of this course will be Islam's remarkable heterogeneity over time and space; the foci will be case studies drawn from across the Muslim world - in Africa, the Middle East Asia and Europe. Through readings and discussions, the course examines the following ten topics: The foundation of Islam, the expansion of Islam and conversion processes, Muslim travelers and trade, religious tolerance, women and gender in Islam, Islamic Education, religious revivalism and reform, Muslim lands under European colonial rule, Islam in the West, and the challenge of modernity. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AFR, REL

HST 323 - Race and Revolution

Course Units: 1.0 This course examines the American Revolution and the Haitian Revolution. With regard to the former, it addresses the "Jefferson question" - that is, how could the author of the Declaration of Independence be the owner of over 200 slaves. Therefore, it deals with competing interpretations in the Early American Republic of the Ideology of "liberty" and "equality." Next, the course delves into the far more radical Haitian Revolution, the only successful slave revolution in history. It will deal with the influences of the American and French revolutions on the French New World colony of St. Domingue that made the Haitian revolution possible. Finally, the course examines the impact of the Haitian Revolution on slavery and the anti-slavery movement in the United States. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AFR, AMS, LAS

HST 367 - The British Empire

Course Units: 1.0 How did the peoples of two windswept, rainy islands - Britain and Ireland - off the northwest corner of Europe create the world's greatest modern empire? Through an analysis of history, literature, and film, this course analyzes the process of empire-building in the eighteenth and nineteenth centuries, the interaction with and impact on the colonial peoples of North America, Asia, and Africa, and the "end" of empire in the twentieth century. This is a course for advanced students taught in an intensive seminar format that emphasizes the creative and critical examination of topics through scholarly reading and active discussion. Prerequisite: any 100-level or 200-level history course or permission of the instructor. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS

HST 372 - Sex, Race and Gender in Latin America

Course Units: 1.0 This course examines the history of the intersection of race, sex and gender in Latin America from the pre-colonial period to the present, especially as evidenced in the changing status of women and the patriarchal order. This history traces the effect of broader societal transformations such as colonialism, imperialism, and economic and political developments on the gender division of labor and the construction of class, race and national identity. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** GSWS, LAS, REL

HST 402 - Seminar in Africa/Middle East: French Empire

Course Units: 1.0 This course examines the history of the French empire in West Africa, North Africa and Southeast Asia. The aim of the course is to introduce students to the history of the wider Francophone world. Three main phases in the long history are explored: colonialism, decolonization and immigration. The course moves chronological through these phases exploring each in diverse geographical settings, and drawing on readings pertaining to particular themes such as the culture of empire, political economy of colonialism, women and gender, literature and expressive culture, colonial violence, and resistance. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS, WAC, WAC-R **ISP:** AFR

Those pursuing the Public History Core

HST 124 - Monuments, Museums, and Movies: Introduction to Public History

Course Units: 1.0 This course will provide an overview of public history, defined as the presentation of history to a general public audience. Students will learn the theory, methods, and practice of public history in its various dimensions, including museums, monuments, historic sites, and films; they will explore the controversies that emerge in public history settings, including the battle over the Enola Gay, the Holocaust Museum, and commemorations of September 11th; and they will engage in a public history project in the Schenectady area. **CC:** SOCS **ISP:** AMS

- A Public History internship (department-approved)

or

HST 265 - The Museum: Theory and Practice

Course Units: 1.0 This course is designed to introduce students to the work of museums through an internship at a Schenectady Museum and accompanying seminar. Articles from anthropology and history (including art history) expose you to the range of practical (e.g., exhibit design, collections policy, planning educational programs) and theoretical issues scholars study (e.g., intellectual property, commodifying culture, whose voice and history should be heard). The internship at a Schenectady Museum gives hands-on experience with museum work and the day-to-day issues museum staff confront. Several fieldtrips introduce different types of museums. **Cross-Listed:** ANT 265 **CC:** SOCS

At least two of the following in addition:

HST 118 - Civil War and Reconstruction

Course Units: 1.0 An examination of the causes of the deepening sectional crisis; the political, economic, and social reasons for Southern secession; the move toward emancipation as a Northern war aim; the impact of the war on women and men, with special attention to geographic location, race, and class; and the experience of Reconstruction in the South. **CC:** SOCS **ISP:** AMS

HST 211 - American Indian History

Course Units: 1.0 An overview of the diverse experiences and histories of the native peoples of North America in the last five centuries. Particular attention will be paid to native peoples' various strategies to respond to change and challenges to native autonomy and communities. **CC:** LCC, SOCS **ISP:** AMS

HST 226 - A Novel View of US History

Course Units: 1.0 This course will examine the broad scope of American history from colonial times to the present as it has been revealed in American literature and novels. Employing principally primary source literature, the course will introduce students not only to American history but to an understanding of important events and developments as comprehended by those who experienced those events or who were contemporary interpreters of those events. Supplemented by lectures on the facts of historical events, primary source works will be used to re-introduce personality and complexity to the historical context in order to stimulate student understanding of the American experience. Students will be encouraged to analyze and examine the variety of outlooks that propel history, while also learning an appreciation for the value and potential of personal scrutiny, insight, and perspective. Primarily driven by readings and discussion, lectures will be used to supplement and place the readings in historical context; however, the focus will be on reading, analysis, comprehension, and communication. **CC:** SOCS **ISP:** AMS

HST 227 - Interviews with History: An Introduction to Oral History

Course Units: 1.0 What was history like for men and women who lived it? Oral History is the practice of collecting stories and information about the past from individuals. In this class, students will read, listen to, and watch oral histories; they will learn theories of memory as they relate to oral history; they will discuss the ethical and legal issues surrounding oral history; and they will learn how to perform, record, and edit an oral history interview. Students will spend a significant portion of their time working on individual projects wherein they will conduct and interpret oral history interviews and write an essay based on that work. **CC:** SOCS **ISP:** AMS

HST 239 - Modern Extremism & Medieval World

Course Units: 1 Whether through movies, video games, or novels, modern society has maintained a longstanding fascination with the world of the European Middle Ages. Yet, as Viking symbols and Crusader slogans used by marchers during the 2017 Unite the Right rally in Charlottesville, VA demonstrated, this period's history has also been used to grow white nationalist movements and spark division. Through studying medieval texts, art, and literature, this course equips you to better understand the historical context behind uses and abuses of medieval culture in popular media and extremist propaganda. **CC:** JCHF, WAC-R **ISP:** REL, STS

HST 265 - The Museum: Theory and Practice

Course Units: 1.0 This course is designed to introduce students to the work of museums through an internship at a Schenectady Museum and accompanying seminar. Articles from anthropology and history (including art history)

expose you to the range of practical (e.g., exhibit design, collections policy, planning educational programs) and theoretical issues scholars study (e.g., intellectual property, commodifying culture, whose voice and history should be heard). The internship at a Schenectady Museum gives hands-on experience with museum work and the day-to-day issues museum staff confront. Several fieldtrips introduce different types of museums. **Cross-Listed:** ANT 265 **CC:** SOCS

HST 270 - History of Latin American Popular Culture

Course Units: 1.0 This course examines the history of Latin America and the Caribbean in the 19th and 20th centuries. Our "texts" for this course are novels, political cartoons, movies, TV shows and music, along with traditional history books. The course seeks to examine the way that Latin American societies have depicted themselves in the popular media, the way that the United States has viewed and absorbed Latin American culture, and the ways that historians have sought to explain the transformations in various countries by examining popular culture. Since Latin American and Caribbean cultures are so closely linked to the United States, and because an increasing number of U.S. citizens are of Latino descent, this course offers valuable insights into the transformations occurring in US culture. **CC:** LCC, SOCS **ISP:** AFR, LAS

HST 278T - South Africa Mini-Term

Course Units: 1.0

HST 285 - The Samurai: Lives, Loves, and Legacies

Course Units: 1.0 This course explores the evolution of the samurai as a caste, their military and family lives, their passions, and their symbolic meaning to Japanese and to others. We will be reading first-hand accounts written by samurai men and women, viewing a number of well-known and lesser-known samurai films, and looking at how the realities of samurai life compare with the many meanings the samurai have acquired over the centuries. **CC:** LCC, SOCS **ISP:** AIS

HST 287 - Film and Modern India

Course Units: 1.0 This course uses a medium of visual representation-cinema-to explore the portrayal of India. It historically traces the development of the cinematic industry in India and highlights the changing images of the region since the 1950s. Each decade evokes a list of stereotypes, of ideas, and of historical realities. We will examine the extent to which films in each decade captured the reality of the period. In particular, we will trace the maturation of the idea of a nation through films and we will explore the positioning of gender in these decades. In general, this course will adopt critical approaches for looking at aesthetics and the representation of South Asia through cinema. **CC:** LCC, SOCS **ISP:** GSWS

HST 289 - Global Indians: South Asian Identity in the United States

Course Units: 1.0 The Indian diaspora today constitutes an important, and in some respects a unique force, in world culture and in the United States. We will begin by studying Indians migrating worldwide through the nineteenth and twentieth centuries with a focus on the United States to pose critical questions about identity, race, religion, gender, cultural assimilation and change. **CC:** LCC, SOCS **ISP:** AMS

HST 324 - Race in American Memory

Course Units: 1.0 "The struggle of man against power," wrote Milan Kundera, "is the struggle of memory against forgetting." This course will examine that struggle as it has taken place in the United States around the issue of race. How have Americans as a nation chosen to remember events that involved race? How and by whom were these

collective memories constructed? In what ways were they contested? How have they changed over time? We will explore these issues focusing on such phenomena as Indian removal, slavery, the Civil War, Jim Crow, Japanese internment and World War II, and the Civil Rights movement, examining depictions in public history and popular cultural forms, including memorials, museums, battlefields, literature, and film. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 325 - War in American Memory

Course Units: 1.0 In recent years, historians have become increasingly interested in collective memory: its construction, its evolution, and the ways in which it has been used as an instrument of power. Collective memories of wars in particular work to inform ongoing debates about national identity. This course examines the ways that Americans have remembered their nation's wars. How were these collective memories constructed and in what ways were they contested? What do they reveal about social. political, and economic tensions? To what ends were these collective memories mobilized? How have they changed over time, and how do we as historians understand those changes? In this class we will explore traditional expressions of war memories such as monuments, memorials, and battlefields as well as cultural expressions of these memories in art, literature, and film. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS **ISP:** AMS

HST 331 - Representing America: United States History in Film

Course Units: 1.0 This course compares the representation of American history in Hollywood film with the reconstruction of our past by scholars. Each week students will critically examine the historically-based films of D. W. Griffith, John Ford, Frank Capra, and others. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS, WAC **ISP:** AMS, FLM

HST 414 - Seminar in US History: Lincoln: Politician to Pop Icon

Course Units: 1.0 Abraham Lincoln has received perhaps the most attention of any U.S. president in both scholarly studies and popular portrayals. Why? This course examines Lincoln during his lifetime: as a man coming of age in Jacksonian America, as an itinerant lawyer, as a fond father and troubled husband, as a politician during a major change in the party system, and as a wartime president. Furthermore, we consider Lincoln's post-assassination career from martyred president to memorialized and criticized symbol of civil rights to motion picture subject. Students will propose, research, and write a seminar paper that examines an aspect of Abraham Lincoln as a major figure in American history and culture. **CC:** SOCS, WAC, WAC-R **ISP:** AMS

HST 481 - Seminar in East Asian History: Remembering World War II in Asia

Course Units: 1.0 World War II was the most destructive conflict of the twentieth century, but many students in America are unfamiliar with the toll it took on Asia and why residual tensions between Japan, China, and Korea remain so real and so raw today. This course examines how the war came about, how it is remembered, and how its complex legacy still affects the region. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS, WAC, WAC-R **ISP:** AIS

- REE 341T - Holocaust History Mini-Term <u>* Note that this course DOES NOT meet a 300-level requirement.</u>

Additional Requirements

Students will also fulfill a distribution requirement. If students select a US, European, or Public History core, they must complete at least two courses each in two of the following areas: Africa/Middle East, Asia, and Latin America. If they select an Africa/Middle East, Asia, or Latin America core, they must complete at least two courses each in two of the following areas, excluding the area of the core: Africa/Middle East, Asia, Europe, Latin America, and US history.

400-level seminars are normally limited to 15 students and are designed to teach research skills. The 300-level courses are specifically designed for history majors and include bibliographical and historiographical components. 400-level seminars and 300-level courses may be used to meet the core requirements. Senior projects normally must pertain to a topic in the core, but cannot count toward courses in the core. Students must complete a 400-level seminar before beginning the thesis. 400-level seminars are normally offered in the winter and spring terms. If a student does not complete a 400-level seminar by the end of their junior year, then they may not be able to graduate by the spring of the following year. Double majors must do a separate two-term senior project in History. Students who want to do an interdepartmental senior project should declare an interdepartmental major.

Requirements for Honors in History:

To be eligible for departmental honors, a student must fulfill the following requirements: (1) a minimum index of 3.30 in history; (2) a grade of "A minus" or higher on the senior project; and (3) a grade of "distinction" or "high pass" in an oral examination based on the senior project. In addition, the student must satisfy College requirements for departmental honors.

Course Selection Guidelines:

Placement: We accept the following AP courses: World History, United States History, and European History. If the score is 4 or 5, then we assign credit for one of our introductory courses, HST 106 for World History, HST 102 for United States History, and HST 147 for European History, all of which will count towards the major.

Courses Suitable for Non-Majors: Although 300 and 400 level courses are designed with History majors and minors in mind, all History courses are suitable for non-majors.

Course Numbering: 300- and 400-level courses have as a prerequisite any 100- or 200-level course or permission of the instructor.

Public History Minor

For information about approved public history internships, contact Andrea Foroughi at forougha@union.edu.

Requirements for the Public History Minor:

Seven courses including:

HST 124 - Monuments, Museums, and Movies: Introduction to Public History

Course Units: 1.0 This course will provide an overview of public history, defined as the presentation of history to a general public audience. Students will learn the theory, methods, and practice of public history in its various dimensions, including museums, monuments, historic sites, and films; they will explore the controversies that emerge in public history settings, including the battle over the Enola Gay, the Holocaust Museum, and commemorations of September 11th; and they will engage in a public history project in the Schenectady area. **CC:** SOCS **ISP:** AMS

- a department-approved Public History internship
  or

HST 265 - The Museum: Theory and Practice

Course Units: 1.0 This course is designed to introduce students to the work of museums through an internship at a Schenectady Museum and accompanying seminar. Articles from anthropology and history (including art history) expose you to the range of practical (e.g., exhibit design, collections policy, planning educational programs) and theoretical issues scholars study (e.g., intellectual property, commodifying culture, whose voice and history should be heard). The internship at a Schenectady Museum gives hands-on experience with museum work and the day-to-day issues museum staff confront. Several fieldtrips introduce different types of museums. **Cross-Listed:** ANT 265 **CC:** SOCS

and

- at least one 300-level course

In addition, one course from the list below:

HST 118 - Civil War and Reconstruction

Course Units: 1.0 An examination of the causes of the deepening sectional crisis; the political, economic, and social reasons for Southern secession; the move toward emancipation as a Northern war aim; the impact of the war on women and men, with special attention to geographic location, race, and class; and the experience of Reconstruction in the South. **CC:** SOCS **ISP:** AMS

HST 211 - American Indian History

Course Units: 1.0 An overview of the diverse experiences and histories of the native peoples of North America in the last five centuries. Particular attention will be paid to native peoples' various strategies to respond to change and challenges to native autonomy and communities. **CC:** LCC, SOCS **ISP:** AMS

HST 226 - A Novel View of US History

Course Units: 1.0 This course will examine the broad scope of American history from colonial times to the present as it has been revealed in American literature and novels. Employing principally primary source literature, the course will introduce students not only to American history but to an understanding of important events and developments as comprehended by those who experienced those events or who were contemporary interpreters of those events. Supplemented by lectures on the facts of historical events, primary source works will be used to re-introduce personality and complexity to the historical context in order to stimulate student understanding of the American experience. Students will be encouraged to analyze and examine the variety of outlooks that propel history, while also learning an appreciation for the value and potential of personal scrutiny, insight, and perspective. Primarily driven by readings and discussion, lectures will be used to supplement and place the readings in historical context; however, the focus will be on reading, analysis, comprehension, and communication. **CC:** SOCS **ISP:** AMS

HST 227 - Interviews with History: An Introduction to Oral History

Course Units: 1.0 What was history like for men and women who lived it? Oral History is the practice of collecting stories and information about the past from individuals. In this class, students will read, listen to, and watch oral histories; they will learn theories of memory as they relate to oral history; they will discuss the ethical and legal issues surrounding oral history; and they will learn how to perform, record, and edit an oral history interview. Students will spend a significant portion of their time working on individual projects wherein they will conduct and interpret oral history interviews and write an essay based on that work. **CC:** SOCS **ISP:** AMS

HST 239 - Modern Extremism & Medieval World

Course Units: 1 Whether through movies, video games, or novels, modern society has maintained a longstanding fascination with the world of the European Middle Ages. Yet, as Viking symbols and Crusader slogans used by marchers during the 2017 Unite the Right rally in Charlottesville, VA demonstrated, this period's history has also been used to grow white nationalist movements and spark division. Through studying medieval texts, art, and literature, this course equips you to better understand the historical context behind uses and abuses of medieval culture in popular media and extremist propaganda. **CC:** JCHF, WAC-R **ISP:** REL, STS

HST 265 - The Museum: Theory and Practice

Course Units: 1.0 This course is designed to introduce students to the work of museums through an internship at a Schenectady Museum and accompanying seminar. Articles from anthropology and history (including art history) expose you to the range of practical (e.g., exhibit design, collections policy, planning educational programs) and theoretical issues scholars study (e.g., intellectual property, commodifying culture, whose voice and history should be heard). The internship at a Schenectady Museum gives hands-on experience with museum work and the day-to-day issues museum staff confront. Several fieldtrips introduce different types of museums. **Cross-Listed:** ANT 265 **CC:** SOCS

HST 270 - History of Latin American Popular Culture

Course Units: 1.0 This course examines the history of Latin America and the Caribbean in the 19th and 20th centuries. Our "texts" for this course are novels, political cartoons, movies, TV shows and music, along with traditional history books. The course seeks to examine the way that Latin American societies have depicted themselves in the popular media, the way that the United States has viewed and absorbed Latin American culture, and the ways that historians have sought to explain the transformations in various countries by examining popular culture. Since Latin American and Caribbean cultures are so closely linked to the United States, and because an increasing number of U.S. citizens are of Latino descent, this course offers valuable insights into the transformations occurring in US culture. **CC:** LCC, SOCS **ISP:** AFR, LAS

HST 285 - The Samurai: Lives, Loves, and Legacies

Course Units: 1.0 This course explores the evolution of the samurai as a caste, their military and family lives, their passions, and their symbolic meaning to Japanese and to others. We will be reading first-hand accounts written by samurai men and women, viewing a number of well-known and lesser-known samurai films, and looking at how the realities of samurai life compare with the many meanings the samurai have acquired over the centuries. **CC:** LCC, SOCS **ISP:** AIS

HST 287 - Film and Modern India

Course Units: 1.0 This course uses a medium of visual representation-cinema-to explore the portrayal of India. It historically traces the development of the cinematic industry in India and highlights the changing images of the region since the 1950s. Each decade evokes a list of stereotypes, of ideas, and of historical realities. We will examine the extent to which films in each decade captured the reality of the period. In particular, we will trace the maturation of the idea of a nation through films and we will explore the positioning of gender in these decades. In general, this course will adopt critical approaches for looking at aesthetics and the representation of South Asia through cinema. **CC:** LCC, SOCS **ISP:** GSWS

HST 289 - Global Indians: South Asian Identity in the United States

Course Units: 1.0 The Indian diaspora today constitutes an important, and in some respects a unique force, in world culture and in the United States. We will begin by studying Indians migrating worldwide through the nineteenth and

twentieth centuries with a focus on the United States to pose critical questions about identity, race, religion, gender, cultural assimilation and change. **CC:** LCC, SOCS **ISP:** AMS

HST 324 - Race in American Memory

Course Units: 1.0 "The struggle of man against power," wrote Milan Kundera, "is the struggle of memory against forgetting." This course will examine that struggle as it has taken place in the United States around the issue of race. How have Americans as a nation chosen to remember events that involved race? How and by whom were these collective memories constructed? In what ways were they contested? How have they changed over time? We will explore these issues focusing on such phenomena as Indian removal, slavery, the Civil War, Jim Crow, Japanese internment and World War II, and the Civil Rights movement, examining depictions in public history and popular cultural forms, including memorials, museums, battlefields, literature, and film. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AFR, AMS

HST 325 - War in American Memory

Course Units: 1.0 In recent years, historians have become increasingly interested in collective memory: its construction, its evolution, and the ways in which it has been used as an instrument of power. Collective memories of wars in particular work to inform ongoing debates about national identity. This course examines the ways that Americans have remembered their nation's wars. How were these collective memories constructed and in what ways were they contested? What do they reveal about social. political, and economic tensions? To what ends were these collective memories mobilized? How have they changed over time, and how do we as historians understand those changes? In this class we will explore traditional expressions of war memories such as monuments, memorials, and battlefields as well as cultural expressions of these memories in art, literature, and film. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS **ISP:** AMS

HST 331 - Representing America: United States History in Film

Course Units: 1.0 This course compares the representation of American history in Hollywood film with the reconstruction of our past by scholars. Each week students will critically examine the historically-based films of D. W. Griffith, John Ford, Frank Capra, and others. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** SOCS, WAC **ISP:** AMS, FLM

HST 414 - Seminar in US History: Lincoln: Politician to Pop Icon

Course Units: 1.0 Abraham Lincoln has received perhaps the most attention of any U.S. president in both scholarly studies and popular portrayals. Why? This course examines Lincoln during his lifetime: as a man coming of age in Jacksonian America, as an itinerant lawyer, as a fond father and troubled husband, as a politician during a major change in the party system, and as a wartime president. Furthermore, we consider Lincoln's post-assassination career from martyred president to memorialized and criticized symbol of civil rights to motion picture subject. Students will propose, research, and write a seminar paper that examines an aspect of Abraham Lincoln as a major figure in American history and culture. **CC:** SOCS, WAC, WAC-R **ISP:** AMS

HST 481 - Seminar in East Asian History: Remembering World War II in Asia

Course Units: 1.0 World War II was the most destructive conflict of the twentieth century, but many students in America are unfamiliar with the toll it took on Asia and why residual tensions between Japan, China, and Korea remain so real and so raw today. This course examines how the war came about, how it is remembered, and how its complex legacy still affects the region. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS, WAC, WAC-R **ISP:** AIS

HST 278T - South Africa Mini-Term

Course Units: 1.0

And either an additional course drawn from the previous list or one course drawn from the following:

- any Art History course

AVA 262 - Real and Recorded Time - 4D Art

Course Units: 1.0 This course will serve as an introduction to the basic concepts of four-dimensional art or time-based artwork, using a variety of processes and media. Students explore concepts in animation techniques, video and audio production, editing, interactivity, installation, and documentation. Class lectures and hands-on studio time will incorporate technique demonstrations, screenings, readings, discussions, technical exploration, aesthetic inquiry and historical information relevant to the course. Outside work is required. **Prerequisite(s):** Any Studio Art course or permission of instructor. **CC:** HUM **ISP:** FLM

CLS 141T - Classical Greek Archaeology

Course Units: 1.0 An introduction to the study of archaeology with field trips to various sites in and near Athens. Four hours per week. Offered only as part of the Term Abroad in Greece. **CC:** LCC

CSC 055 - Working with the Web

Course Units: 1.0 Design, writing, and publishing of WWW pages; creation of graphical images; study of the underlying Web technologies such as communication protocols, digital encoding and compression; programming of Web pages. **CC:** SET **ISP:** STS

EGL 290 - Studies in Film Genre/Style: Film Noir

Course Units: 1.0

Over the course of the term, we will analyze the history and aesthetics of genre categories and their revisions with respect to specific codes and characteristics, audience expectations, technological developments, and publicity practices. In our investigation of the question of genre, we will engage such key concepts in film theory as authorship, narrative, mise-en-scène, suture, spectatorship, and the gaze. As we seek to understand why genres gain popularity in certain historical moments and the ways in which genres are revised, we will employ a variety of critical tools, drawn from genre theory, critical race studies, environmental studies, and theories of gender and sexuality. Finally, we will ask whether genre studies as a critical approach is keeping pace with the many new developments shaping cinematic form.
Film Noir

This term, our investigation of genre will focus specifically on film noir. We will study the genre's emergence from German Expressionism, pre-code gangster movies, screwball comedy, and hard-boiled detective fiction and consider the historical factors that led to the burgeoning of film noir in the 1940s and 50s. In addition to the standard characters (detective, femme fatal, gangsters, "deviants"), we will analyze filmic styles (low-key lighting, voice-over narration, etc.) and themes of alienation, corruption and existential drift that characterize the genre. From its origins in post-World War II America, we will explore film noir's radical revisions and geographic relocations as it is taken up in such places as France, Hong Kong, Korea, and Mexico. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP

English Language or Literature and Composition test, or permission of the instructor. **CC:** HUM, WAC, JLIT, JSPE **ISP:** AMS, FLM

FLM 201 - Documentary Filmmaking

Course Units: 1.0 For beginners to advanced, Documentary Filmmaking presents the foundations of non-fiction filmmaking: from camera and equipment use to interviewing techniques and storytelling strategies. While creating a short documentary on a subject of the student's choosing, participants will come to understand the interface between them and world around them through the filter of the camera. Students can work in a variety of documentary styles which are explained in class. These forms include the poetic, expository, observational and participatory form. The skills learned in this class are valuable across many disciplines and jobs which involve interpersonal relationships, media skills, research and working with subjects. **CC:** HUM **ISP:** FLM

MLT 339 - The Holocaust in Film: Cinematic Treatments of Violence, Trauma and Memory

Course Units: 1.0 The course examines cinematic representations of the Holocaust in the films of German, German-Jewish, and other European filmmakers. Comparing and contrasting a variety of film genres and cinematic techniques, we explore fundamental questions about the relationships between art and history, representation and experience and memory and responsibility. By considering theoretical and historical readings as well, we situate the films within significant intellectual and historical contexts. **Cross-Listed:** GER 339 **CC:** HUM, LCC, WAC, JCHF, JLIT **ISP:** FLM

PSC 260 - Policy Making and American Society

Course Units: 1.0 The process through which public policies are originated, shaped, adopted, and applied at all levels of government in the U.S. and the impact of public policies on American society. Policies such as crime, immigration, gay rights, abortion, the environment, smoking, and others are used as case studies to examine the policy process. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS

PSC 340 - Politics and Film

Course Units: 1.0 This course explores political themes through the rigorous viewing of feature films and documentaries from the United States and abroad. Films present differing perspectives on the subject. Themes include war, revolution, counter-revolution, role of the individual in social conflict, and US intervention in foreign lands. Class requires critical analysis of the films, supplementary readings, and six conceptual-analytical papers. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, FLM

- REE 341T - Holocaust History Mini-Term

Interdepartmental

Interdisciplinary Studies

Interdisciplinary creates educational opportunities through combining two or more academic disciplines. Indeed, often boundaries are pushed and new discoveries made at the margins of established field and research methods. Union College recognizes the rich possibilities of interdisciplinary studies by offering many opportunities for both faculty and students to engage with multiple disciplines - and each other - in collaborative classroom settings, innovative majors and unique research initiatives.

Vibrant interdisciplinary studies (IS) can be pursued through a variety of designated degree programs at Union College. Students are able to major and/or minor in our many Interdisciplinary Studies Programs (ISP) in wide ranging topics from Film Studies to Neuroscience.

International Programs

Director: L. Atkins
Staff: G. Casper (Assistant Director), V. Meshkov (Office Coordinator)

Union College considers its commitment to international programs to be a central part of its identity. In addition to broadening a student's perspective and deepening their knowledge of other cultures, international programs often energize and challenge a student to a higher level of commitment to the enterprise of learning. Students wishing to study away from Union College may do so through the following international programs:

- Study Abroad
- Exchanges
- Independent Study Abroad
- Non-Union Programs
- Mini-Term Programs

Updated information on the timing, details, and course descriptions for each international program listed below, are available from the International Programs office. The application, application instructions, policies, and waiver and liability forms are available on the International Programs website. Please refer to the "Costs, Fees" section for charges related to International Programs.

Applicants to Union College international programs must:

- Be a matriculated student in residence at Union College with an overall Union cumulative average of at least 2.5 at the time of application.
- Be considered in "good conduct standing" as verified y the Office of Community Standards & Accountability
    - "Good Conduct Standing" as defined here indicates that a student has not been deemed ineligible to participate in a term abroad program specifically or as a part of a probationary term; or separated from the College as a result of suspension or expulsion. This does not include voluntary leave.
    - Students applying to participate in a Union College international program must disclose any and all disciplinary history as per application procedure.
- Have a clear account balance, as verified by the Financial Services Office.
- Be in good academic standing, as verified by the Dean of Studies.
- Meet the minimum language requirement (if any), as specified in the program description.
- Complete the application process, which includes an essay.

Maintenance of Eligibility ***after*** **Acceptance to Program:**

- Maintain an overall Union cumulative GPA of at least 2.5 up to the date of departure for the program.
- Successfully complete at least two courses in residence as a full-time matriculated student at Union College the term prior to the study abroad program.
- Shortly prior to departure, all participant names will be reviewed again to determine that students:
- Have a clear account balance, as verified by the Financial Services Office.
- Be considered in "good conduct standing" as verified by the Office of Community Standards & Accountability.
- Are in good academic standing, as verified by the Dean of Studies.
- For the duration of the study abroad program, the student must be a full-time matriculated student at Union College.

*2.5 for London, England full-term abroad, 2.8 for Belgium and France (Lille), 3.0 for Cambodia, England (York), Independent Study Abroad, Ireland, Japan, and Turkey, and a 3.2 for the Klemm Fellow Internship.

Students seeking to study away must demonstrate that they are well-prepared to do so, academically and in terms of overall maturity. Participation in the programs is limited and competitive. Students should apply for particular opportunities that are well-integrated with the student's academic work at Union. Please consult the Common Curriculum section on how international programs relate to various requirements. Attendance at a program's informational meeting is essential. Selection criteria include the student's essay, GPA, faculty recommendations, course of study, certification by the Dean of Students, and the selection committee's assessment of the student's capability of adapting to the program's social and academic environment. Should there be additional selection criteria, they will be announced at the informational meeting. In addition, some international programs have academic prerequisites.

Academic Policy While on an International Program

Policy Regarding Late Arrival, Early Departure, Early Exams, Pass/Fail and Incomplete Grades

Students on Union College international programs are prohibited from requesting late arrival, early departure, early exams, taking courses pass/fail, withdrawal from courses, or incomplete grades. In extraordinary circumstances, a request for special arrangements such as early departure, early exams or incomplete grades must be submitted in writing to the study abroad office at the host institution, the Dean of Studies at Union College and the International Programs Office at Union College. If the host institution approves the request, the matter will be reviewed by the Director of International Programs Office and the Dean of Studies at Union College, who will advise the study abroad office at the host institution and the student of its decision. If the request is approved, the study abroad office at the host institution will advise the Student whether it will make the arrangements on behalf of the student or whether the student is expected to make the arrangements.

Any special arrangements agreed upon, including remaining work and deadlines, should be documented in writing by instructors and by the study abroad office at the host institution. Copies of these arrangements must be sent to the Dean of Studies and the Director of International Programs at Union College.

Failure to follow these procedures may result in the student receiving no credit or a failing grade. A student may appeal Union College's decision by contacting the Dean of Studies at Union College to find out about the process.

Changes to Courses after Student's Arrival at Site Abroad

Union College students can only change course selections during the host institution's drop/add period. In some Union study abroad programs there is no opportunity for adding or dropping courses.

Changes to Courses for Independent Study Abroad or Non-Union Programs Made after Student's Arrival at Site Abroad

Union College students must request in writing changes to course selections and equivalencies directly through the Dean of Studies at Union College by the end of the first full week of classes. Copies of all changes will be sent by the Dean of Studies' office to the Director of the International Programs office to ensure that the course equivalencies are posted correctly upon the student's return. Failure to follow these procedures may result in the student receiving no credit or a failing grade.

Grades Earned Abroad

Grades received from any of Union College's international programs will be entered into student's academic record and calculated into a student's GPA.

Grade Appeal Policy for Courses Taken While on Study Abroad Programs

A. Procedure for students taking courses taught by Union faculty (see online Academic Program and Policies)
B. Procedure for students on study abroad experiences (excluding mini-terms)

Union College will allow students to appeal grades awarded by non-Union faculty in accordance with the procedures listed below. The Dean of Studies' review of a student's petition may be limited or not allowed due to circumstances beyond the Dean's control in assessing the petition. Such circumstances may include, but are not limited to when the non-Union faculty member does not have a syllabus that adheres to Union College standards. The Dean's decision will be communicated to the student. There will be no further appeal.

Students wishing to appeal a grade must:

1. Initiate an appeal through the host institution no later than two weeks following the date of posting of their final grades to their Union transcript. Students must follow the host institution's procedures for grade appeals.
2. If the outcome of the initial appeal to the host institution is unsatisfactory, the student may petition the Dean of Studies at Union College for a grade appeal. This must be done within two weeks upon receipt of the final determination from the host institution. The Union College appeal is limited to the three conditions listed above in "End of Term Grade Changes".

Registering for Union Courses While Abroad

While abroad, students must check Union email for registration instructions from the Registrar, registrar@union.edu. An outline of the registration process can be found here.

Union Housing and Study Abroad

The policy for studying abroad and living on campus can be found on the Residential Education website page.

Costs

Full Terms

The base cost of a full term abroad is one-third of Union's comprehensive fee, which may differ from the fees of program providers. The College charges an additional fee of $600 for each faculty-led term abroad to cover several guided study excursions to enhance the cultural and academic experience.Students participating on full-term programs outside of the United States will be billed an additional $50 to cover health insurance abroad. Students are responsible for coordinating and paying for their own airfare and visa fees (if a visa is necessary). With the exception of work-study, all financial aid a student receives applies to the study abroad program. The Study Abroad Programs sections further below lists the full term programs.

Exchange Programs

Union has several tuition-only exchange programs to Akita International University in Japan; an engineering exchange program to Middle Eastern Technical University, METU, in Ankara, Turkey; and two economic exchange programs to University of Antwerp in Belgium and IESEG in Lille, France. In these programs, students pay tuition to Union and room and board abroad. There are no faculty leaders or group excursions on these exchange programs. A $50 study aboard fee will be charged towards mandated international health insurance.

Mini-Terms

For 2024-2025, the fee of all mini-terms is $3,900. This fee covers all tuition, room, board, and group excursions. Students participating on mini-terms outside of the United States will be billed an additional $30 to cover health insurance abroad. Financial aid does not apply to mini-terms, but loans are available. Students are responsible for coordinating and paying for their own airfare.

For Student Athletes

If your team makes the playoffs at the end of November or beginning of December you will likely have a conflict with the departure date for the mini-terms. Mini-terms typically start the weekend after Thanksgiving. Due to the abbreviated nature of the mini-term, a late arrival to the mini-term is not acceptable. If you opt not to go on the mini-term, you will be responsible for the withdrawal fee (see below) which by that date is the full cost of the mini-term.

Non-Union Study Abroad Programs

Students are billed Union College's comprehensive fee for the winter and/or spring terms, which may differ from the fees of program providers. In the case of the William Cady Stone Fellowship academic year program students are billed a full year's comprehensive fee which may differ from the fees of the program providers. In both cases, Union College will pay the tuition, room, and board to the host institution. The total amount paid to the other institution, including course waivers or any fees for additional courses (if the host institution will allow a fifth course for an additional fee, Union College will pay that fee) shall not exceed the cost of the Union comprehensive fee for each term. At times the cost for the Non-Union program may be lower than Union's comprehensive fee. Students are responsible for paying any amount that exceeds the Union comprehensive fee for the applicable number of terms abroad.

Independent Study Abroad

Students are billed Union College's comprehensive fee for the winter and/or spring terms and Union College will cover any tuition, room, and board costs. In some cases, Union College may issue checks to students going on Independent Study Abroad program, so that they can make payments or partial payments, for tuition, room, and board when they are in-country. The total amount paid shall not exceed the cost of the Union comprehensive fee for those terms that the student is abroad. Students are responsible for paying any amount that exceeds the Union comprehensive fee for the applicable number of terms abroad.

Union College International Programs (Study Away) Withdrawal Policy

The success of study away programs from the Union campus requires student commitment well in advance of the anticipated dates of the term of study. When a student withdraws after having made a commitment to such a program, it may be too late to offer the spot to another student who was willing and able to participate. Also, Union College incurs expenses well before a program begins that cannot be recovered when students withdraw. In the case of mini-terms, withdrawals can jeopardize the viability of the program. The International Programs Withdrawal Policy is designed to prompt students to consider their commitment to the program to which they have applied in light of the financial consequences of withdrawal. This policy applies to all Union-and non-Union study away programs, including mini-terms.

Item	**Prior to Program Start Date**	**On / After Program Start Date**
$600 Study Abroad Fee, if applicable	Credited to student account	Pro-rated based on percentage of time abroad
$50 ($30) Health Insurance Fee for full-term (mini-term)	Credited to student account	No Reimbursement
Allowance (meals, internal transportation, cellphone, etc.), if applicable	Credited to student account	Pro-rated based on percentage of time abroad

If you withdraw from the program or do not complete it in its entirety and have received a fellowship, you may be responsible for re-paying it. Contact Financial Aid if you have taken loans from Union.

Withdrawal Fee

Unless one of the exceptions listed below applies, a student who withdraws from participation in a program or is no longer allowed to participate because of Union College disciplinary sanctions will be charged a withdrawal fee, which is based on the date of official withdrawal, as indicated in the table below. Official withdrawal occurs when a student informs the International Programs office of the withdrawal in writing or the International Programs office informs the student of his or her ineligibility to participate.

When Official Withdrawal Occurs:	Withdrawal Fee:
After Commitment	$350 - all programs
59-31 days before the start*	$2500 - all programs
30 days before the start*	$3900 (mini-term), $4000 (all other programs)
During the program	$3900 (mini-term), $5000 (all other programs)

*If a student withdraws 1-59 days before the start of a program, Union College will make a good faith effort to replace the student with another qualified student or to obtain a refund from its overseas providers; the withdrawal fee will not apply if a replacement student is found or to the extent that the College obtains a refund.

Exceptions to Withdrawal Fee:

Students will not be charged the withdrawal fee if any of the following occurs:

- Student withdraws from Union College for medical reasons during the program in accordance with Union College's medical withdrawal policy.
- A documented medical situation occurs before the start of the program that prevents the student from participating in the program.
- Student becomes ineligible to participate because of insufficient overall GPA or not maintaining good academic standing.
- A student becomes ineligible to participate if, in spite of following the proper procedures in a timely manner, the student was denied a visa by the host country.

Policy on Travel Restrictions for International Programs

Union College makes available to qualified students the opportunity to participate in the wide variety of programs that can be conducted in a manner that addresses health, safety and security concerns. The Travel Advisory Policy outlines this process in detail. Union College reserves the right to preclude travel to a country if, after a risk assessment is completed, it is the judgment of the Vice President for Academic Affairs and Dean of the Faculty, with input from the Director of International Programs, travel to the country is deemed too risky.

Study Abroad Programs

The most extensive of the College's formal arrangements for foreign study are the term-length study abroad programs. Most programs involve credit in Common Curriculum (General Education) and language study, as well as regular course credit for additional study performed abroad. Currently, terms abroad are offered through a variety of programs designed by Union College faculty. The College is also part of the New York Six Liberal Arts Consortium and the Partnership for Global Education. The New York Six Liberal Arts Consortium broadens off campus study opportunities to Union students through pre-approved programs offered by New York Six member schools (i.e. Colgate University, Hamilton College, Hobart and William Smith Colleges, St. Lawrence University, Skidmore College, and Union College). The Partnership for Global Education is a consortium with Hobart & William Smith Colleges, whereby students can study abroad in Australia, Brazil, Ireland and Vietnam.

Unless otherwise noted, students take three courses while on a term abroad; normally, these are the official program courses, unless the Director of International Programs grants permission to substitute one non-program course. Please consult the Common Curriculum (General Education) section on how international programs relate to various requirements.

The following study abroad programs are offered at Union College and include three courses, unless otherwise indicated:

Argentina (Córdoba): Fall, Offered even years. Faculty Member in Residence

Armenia: Spring, Faculty Member in Residence

Australia (Brisbane): Fall, 4 courses. Offered as part of the Partnership in Global Education. Faculty Member in Residence

Australia (Sydney) Winter, Offered even years.

Brazil (Sao Paulo): Fall, Offered odd years, 4 courses. Offered as part of the Partnership in Global Education. Faculty Member in Residence

Cambodia (Phnom Penh): Winter.

China (Shanghai): Fall. Taiwan (Taipei) is temporarily replacing this program.

England (London): Winter. Offered odd years.

Fiji: Fall. Offered in odd years. Faculty Member in residence.

France (Rennes): Fall, 4 courses. Faculty Member in Residence.

Germany (Freiburg & Berlin): Spring. Faculty Member in Residence.

Greece (Athens): Fall, 4 courses.

India (Jaipur): Winter, Offered odd years. Faculty Member in Residence.

Ireland (Galway): Fall, 4 courses. Offered as part of the Partnership in Global Education. Faculty Member in Residence.

Italy (Florence): Spring, Faculty Member in Residence.

Italy (Sicily): Spring, Offered odd years. Faculty Member in Residence.

National Health Systems (USA, Canada, Netherlands, Scotland & England): Summer, Faculty Member in Residence.

Spain (Seville): Fall, Offered odd years. Faculty Member in Residence.

Vietnam: Fall, 4 courses. Offered as part of the Partnership in Global Education. Faculty Member in Residence.

Study Abroad/Exchange

England (York): Fall, Faculty Member in Residence.

Domestic Program

Silicon Valley (San Francisco): Winter. Faculty Member in Residence.

Exchanges

The College has the following exchange programs:

Belgium (Antwerp): Fall, 4 courses/4 Union credits, at the University of Antwerp in Belgium, for Economics majors. Unavailable for the academic year 2024-2025
France (Lille): Winter, 6 courses/3 Union credits, at the IESEG School of Management in Lille, France, for Economics majors.
Japan (Akita): Fall, 4-courses totaling 12 credit hours/4 Union credits, at the Akita International University of in

Japan.
Turkey (Ankara): Fall and Winter/Spring, 4 courses/4 Union credits at Middle East Technical University (METU).

Non-Union Study Abroad

Non-Union Study Abroad programs allow students who are primarily juniors the opportunity to participate in study abroad programs through other colleges and universities, provided that the program addresses a curricular need that cannot be met by a Union program. Normally these programs take place in countries in which Union does not have an existing term abroad or exchange program.

Detailed proposals for non-Union programs must be submitted no later than the third week of spring term the year prior to the time when the study abroad would take place. Students should refer to the International Programs website for deadlines. The Liaison Committee on Study Abroad approves non-Union proposals. The student must demonstrate readiness and preparation to undertake the proposed course of study and provide details of a feasible plan of study that is well-integrated with the student's academic work at Union. There are two options for non-Union study abroad programs: winter/spring non-union study abroad and the full year William Cady Stone Fellowship.

The more common non-Union study abroad option, this opportunity takes place during winter and spring terms with the student enrolling in Spring semester course offerings from other colleges and universities.

Generally, semester programs give credit for four or five courses. Students may use one or more of the methods to close the credit gap such that students earn 6 Union credits total:

- If the host institution for the program will allow an additional course for an additional fee, Union will pay that fee.
- Students may take one or more free fourth courses at Union during the academic year.
- Students may take one or two summer school courses at Union College. Course tuition will be waived, but the student will be responsible for room and board.
- Students may take one or more summer school courses at another accredited institution for transfer credit. Union will pay tuition for the course(s), but not room and board.
    - For courses taken at another institution please note that Union's transfer credit guidelines will apply.
    - Students will need to apply for transfer credit approval for each course.
    - Courses cannot be taken at a community college unless approved by the Dean of Studies.
    - Transfer credit will not be granted for online courses.
    - Course work at other colleges will be recognized only if a minimum grade of "C" is achieved (pass/fail grades are not allowed).
    - Courses taken as a part of the transfer credit approval process to make up for credit gaps created by taking a non-union term aboard will count towards credits to graduate, yet the grades will not be recorded on a student's Union College transcript nor factored into a student's cumulative academic average.

Fellowships

Full Year William Cady Stone

The William Cady Stone Fellowship allows only one student per year to participate in a full year abroad. Students applying for this fellowship should be able to explain the benefits of a full year study abroad program at an accredited institution of his or her choice over a semester/trimester program. Additional information can be obtained from the International Programs office and on its website.

Students are billed Union College's comprehensive fee for fall, winter and spring terms and Union College will pay the tuition, room, and board to the host institution.

Three Week Klemm Fellow International Internship Program

The Klemm Fellow International Internship Program is a highly selective program which places Union students in a foreign country where they work as an intern in a local organization and stay with a local host family for three weeks during the winter break. Projects Abroad is Union's partner organization and arranges the internships and host families for Union. Additional information can be obtained from the International Programs office and on its website.

All program costs are covered by the Klemm Fellow International Internship Program, except for incidentals and informal weekend excursions.

Independent Study Abroad

The Independent Study Abroad Program allows one Union College student per academic year to study abroad at an international college, university, or institute during his/her junior or senior year. The proposed program of study must meet a curricular need that cannot be met by a Union or Non-Union term abroad; it must also take place in a location that cannot be covered by a Union or Non-Union term abroad. A student applying for an ISA must directly enroll in an international college, university or institute. The ISA student must enroll in one or two courses at a university, college or institute in the host country (the equivalent of three courses per term). A student may also arrange with a Union College faculty member to do a course or courses (depending on total number of courses taken) as an approved independent study, research project, service-learning project or internship. The student must identify a Union College faculty member who has agreed to supervise and grade the academic work and to serve as a resource for the student while on the ISA.

An ISA must take place during the winter and/or spring term. Detailed proposals for ISAs must be submitted no later than the fifth week of winter term the year before ISA study would take place. Students should refer to the International Programs website for deadlines. The Liaison Committee on Study Abroad approves ISA proposals

Mini-Term Programs

Every year Union College offers a variety of mini-terms. A mini-term is a three week program running either over winter break or at the beginning of summer break. Mini-terms have been offered in Argentina, Bali, China, Egypt (currently unavailable), England, France, India, Italy, New Zealand, Senegal, South Africa, Spain, and New Hampshire Presidential Primary program. Mini-terms carry an additional tuition charge and yield one course credit. They cannot be combined with two courses in another term as one term's tuition.

International Programs

Director: L. Atkins
Staff: G. Casper (Assistant Director), V. Meshkov (Office Coordinator)

Union College considers its commitment to international programs to be a central part of its identity. In addition to broadening a student's perspective and deepening their knowledge of other cultures, international programs often energize and challenge a student to a higher level of commitment to the enterprise of learning. Students wishing to study away from Union College may do so through the following international programs:

- Study Abroad
- Exchanges
- Independent Study Abroad
- Non-Union Programs
- Mini-Term Programs

Updated information on the timing, details, and course descriptions for each international program listed below, are available from the International Programs office. The application, application instructions, policies, and waiver and liability forms are available on the International Programs website. Please refer to the "Costs, Fees" section for charges related to International Programs.

Applicants to Union College international programs must:

- Be a matriculated student in residence at Union College with an overall Union cumulative average of at least 2.5 at the time of application.
- Have fewer than five disciplinary points as verified by the Dean of Students.
- Have a clear account balance, as verified by the Financial Services Office.
- Be in good academic standing, as verified by the Dean of Studies.
- Meet the minimum language requirement (if any), as specified in the program description.
- Complete the application process, which includes an essay.

Maintenance of Eligibility *after* **Acceptance to Program:**

- Maintain an overall Union cumulative GPA of at least 2.5 up to the date of departure for the program.
- Successfully complete at least two courses in residence as a full-time matriculated student at Union College the term prior to the study abroad program.
- Shortly prior to departure, all participant names will be reviewed again to determine that students:
- Have a clear account balance, as verified by the Financial Services Office.
- Have fewer than five disciplinary points, as verified by the Dean of Students.
- Are in good academic standing, as verified by the Dean of Studies.
- For the duration of the study abroad program, the student must be a full-time matriculated student at Union College.

*2.7 for London, England full-term abroad, 2.75 for Belgium and France (Lille), 3.0 for Cambodia,England (York), Independent Study Abroad, Ireland, Japan, and a 3.2 for the Klemm Fellow Internship.

Students seeking to study away must demonstrate that they are well-prepared to do so, academically and in terms of overall maturity. Participation in the programs is limited and competitive. Students should apply for particular opportunities that are well-integrated with the student's academic work at Union. Please consult the Common Curriculum section on how international programs relate to various requirements. Attendance at a program's informational meeting is essential. Selection criteria include the student's essay, GPA, faculty recommendations, course of study, certification by the Dean of Students, and the selection committee's assessment of the student's capability of adapting to the program's social and academic environment. Should there be additional selection criteria, they will be announced at the informational meeting. In addition, some international programs have academic prerequisites.

Academic Policy While on an International Program

Policy Regarding Early Departure, Early Exams, Pass/Fail and Incomplete Grades

Students on Union College international programs are prohibited from requesting early departure, early exams, taking courses pass/fail, withdrawal from courses, or incomplete grades. In extraordinary circumstances, a request for special arrangements such as early departure, early exams or incomplete grades must be submitted in writing to the study abroad office at the host institution, the Dean of Studies at Union College and the International Programs Office at Union College. If the host institution approves the request, the matter will be reviewed by the Director of International Programs Office and the Dean of Studies at Union College, who will advise the study abroad office at the host institution and the student of its decision. If the request is approved, the study abroad office at the host institution will advise the Student whether it will make the arrangements on behalf of the student or whether the student is expected to make the arrangements.

Any special arrangements agreed upon, including remaining work and deadlines, should be documented in writing by instructors and by the study abroad office at the host institution. Copies of these arrangements must be sent to the Dean of Studies and the Director of International Programs at Union College.

Failure to follow these procedures may result in the student receiving no credit or a failing grade. A student may appeal Union College's decision by contacting the Dean of Studies at Union College to find out about the process.

Changes to Courses after Student's Arrival at Site Abroad

Union College students can only change course selections during the host institution's drop/add period. In some Union study abroad programs there is no opportunity for adding or dropping courses.

Changes to Courses for Independent Study Abroad or Non-Union Programs Made after Student's Arrival at Site Abroad

Union College students must request in writing changes to course selections and equivalencies directly through the Dean of Studies at Union College by the end of the first full week of classes. Copies of all changes will be sent by the Dean of Studies' office to the Director of the International Programs office to ensure that the course equivalencies are posted correctly upon the student's return. Failure to follow these procedures may result in the student receiving no credit or a failing grade.

Grades Earned Abroad

Grades received from any of Union College's international programs will be entered into student's academic record and calculated into a student's GPA.

Grade Appeal Policy for Courses Taken While on Study Abroad Programs

1. Procedure for students taking courses taught by Union faculty (see online Academic Program and Policies)
2. Procedure for students on study abroad experiences (excluding mini-terms)

Union College will allow students to appeal grades awarded by non-Union faculty in accordance with the procedures listed below. The Dean of Studies' review of a student's petition may be limited or not allowed due to circumstances beyond the Dean's control in assessing the petition. Such circumstances may include, but are not limited to when the non-Union faculty member does not have a syllabus that adheres to Union College standards. The Dean's decision will be communicated to the student. There will be no further appeal.

Students wishing to appeal a grade must:

1. Initiate an appeal through the host institution no later than two weeks following the date of posting of their final grades to their Union transcript. Students must follow the host institution's procedures for grade appeals.
2. If the outcome of the initial appeal to the host institution is unsatisfactory, the student may petition the Dean of Studies at Union College for a grade appeal. This must be done within two weeks upon receipt of the final determination from the host institution. The Union College appeal is limited to the three conditions listed above in "End of Term Grade Changes".

Costs

Full Terms

The base cost of a full term abroad is one-third of Union's comprehensive fee, which may differ from the fees of program providers. The College charges an additional fee of $600 for each faculty-led term abroad to cover several guided study excursions to enhance the cultural and academic experience. Students participating on full-term programs outside of the United States will be billed an diitional $50 to cover health insurance abroad. Students are responsible for coordinating and paying for their own airfare and visa fees (if a visa is necessary). With the exception of work-study, all financial aid a student receives applies to the study abroad program. The Study Abroad Program section further below lists the full term programs.

Exchange Programs

Union has several tuition-only exchange programs to Akita International University in Japan; an engineering exchange program to Middle Eastern Technical University, METU, in Ankara, Turkey; and two economic exchange programs to University of Antwerp in Belgium and IESEG in Lille, France. In these programs, students pay tuition to Union and room and board abroad. There are no faculty leaders or group excursions on these exchange programs. A $50 study abroad fee will be charged towards mandated health insurance.

Mini-Terms

The fee of for all mini-terms, with the exception of the New Hampshire Presidential Primary, is $3,800. This fee covers tuition, room, board, and group excursions. Students participating on mini-terms outside of the United States will be billed an additional $30 to cover health insurance abroad. Students are responsible for coordinating and paying for their own airfare. A student's financial aid package does not apply to mini-terms, but additional financial aid and loan options may be available. Please consult the Financial Aid Office.

Non-Union Study Abroad Programs

Students are billed Union College's comprehensive fee for the winter and/or spring terms, which may differ from the fees of program providers. In the case of the William Cady Stone Fellowship academic year program students are billed a full year's comprehensive fee which may differ from the fees of the program providers. In both cases, Union College will pay the tuition, room, and board to the host institution. The total amount paid to the other institution, including course waivers or any fees for additional courses (if the host institution will allow a fifth course for an additional fee, Union College will pay that fee) shall not exceed the cost of the Union comprehensive fee for each term. At times the cost for the Non-Union program may be lower than Union's comprehensive fee. Students are responsible for paying any amount that exceeds the Union comprehensive fee for the applicable number of terms abroad.

Independent Study Abroad

Students are billed Union College's comprehensive fee for the winter and/or spring terms and Union College will cover any tuition, room, and board costs. In some cases, Union College may issue checks to students going on an Independent Study Abroad program, so that they can make payments or partial payments, for tuition, room, and board when they are in-country. The total amount paid shall not exceed the cost of the Union comprehensive fee for those terms that the student is abroad. Students are responsible for paying any amount that exceeds the Union comprehensive fee for the applicable number of terms abroad.

Union College International Programs (Study Away) Withdrawal Policy

The success of study away programs from the Union campus requires student commitment well in advance of the anticipated dates of the term of study. When a student withdraws after having made a commitment to such a program, it may be too late to offer the spot to another student who was willing and able to participate. Also, Union College incurs expenses well before a program begins that cannot be recovered when students withdraw. In the case of mini-terms, withdrawals can jeopardize the viability of the program. The International Programs Withdrawal Policy is designed to prompt students to consider their commitment to the program to which they have applied in light of the financial consequences of withdrawal. This policy applies to all Union-and non-Union study away programs, including mini-terms.

Item	Prior to Program Start Date	On / After Program Start Date
$600 Study Abroad Fee, if applicable	Credited to student account	Pro-rated based on percentage of time abroad
$50 ($30) Health Insurance Fee for full-term (mini-term)	Credited to student account	No Reimbursement
Allowance (meals, internal transportation, cellphone, etc.), if applicable	Credited to student account	Pro-rated based on percentage of time abroad

If you withdraw from the program or do not complete it in its entirety and have received a fellowship, you may be responsible for re-paying it. Contact Financial Aid if you have taken loans from Union.

Withdrawal Fee

Unless one of the exceptions listed below applies, a student who withdraws from participation in a program or is no longer allowed to participate because of Union College disciplinary sanctions will be charged a withdrawal fee, which is based on the date of official withdrawal, as indicated in the table below. Official withdrawal occurs when a student informs the International Programs office of the withdrawal in writing or the International Programs office informs the student of his or her ineligibility to participate.

When Official Withdrawal Occurs:	Withdrawal Fee:
After Commitment	$350 - all programs
59-31 days before the start*	$2500 - all programs
30 days before the start*	$3800 (mini-term), $4000 (all other programs)
During the program	$3800 (mini-term), $5000 (all other programs)

*If a student withdraws 1-59 days before the start of a program, Union College will make a good faith effort to replace the student with another qualified student or to obtain a refund from its overseas providers; the withdrawal fee will not apply if a replacement student is found or to the extent that the College obtains a refund.

Exceptions to Withdrawal Fee:

Students will not be charged the withdrawal fee if any of the following occurs:

- Student withdraws from Union College for medical reasons during the program in accordance with Union College's medical withdrawal policy.
- A documented medical situation occurs before the start of the program that prevents the student from participating in the program.
- Student becomes ineligible to participate because of insufficient overall GPA.
- A student becomes ineligible to participate if, in spite of following the proper procedures in a timely manner, the student was denied a visa by the host country.

Policy on Travel Restrictions for International Programs

Union College makes available to qualified students the opportunity to participate in the wide variety of programs that can be conducted in a manner that addresses health, safety and security concerns. The Travel Advisory Policy outlines this process in detail. Union College reserves the right to preclude travel to a country if, after a risk assessment is completed, it is the judgment of the Vice President for Academic Affairs and Dean of the Faculty, with input from the Director of International Programs, travel to the country is deemed too risky.

Study Abroad Programs

The most extensive of the College's formal arrangements for foreign study are the term-length study abroad programs. Most programs involve credit in Common Curriculum (General Education) and language study, as well as regular course credit for additional study performed abroad. Currently, terms abroad are offered through a variety of programs designed by Union College faculty. The College is also part of the New York Six Liberal Arts Consortium and the Partnership for Global Education. The New York Six Liberal Arts Consortium broadens off campus study opportunities to Union students through pre-approved Non-Union programs offered by New York Six member schools (i.e. Colgate University, Hamilton College, Hobart and William Smith Colleges, St. Lawrence University, Skidmore College, and Union College). The Partnership for Global Education is a, a consortium with Hobart & William Smith Colleges, whereby students can study abroad in Australia, Brazil, Ireland and Vietnam.

Unless otherwise noted, students take three courses while on a term abroad; normally, these are the official program courses. Please consult the Common Curriculum (General Education) section on how international programs relate to various requirements.

The following study abroad programs are offered at Union College and include three courses, unless otherwise indicated:

Argentina (Córdoba): Fall, Offered even years. Faculty Member in Residence

Australia (Brisbane): Fall, 4 courses. Offered as part of the Partnership in Global Education. Faculty Member in Residence

Australia (Sydney): Winter, Ofered even years.

Brazil (Sao Paolo): Fall, Offered odd years, 4 courses. Offered as part of the Partnership in Global Education. Faculty Member in Residence

Cambodia (Phnom PenhSiem Reap): Winter.

China (Shanghai): Fall.

England (London): Winter, Offered off years.

Fiji: Fall. Offered in odd years. Faculty Member in residence.

France (Rennes): Fall, 4 courses. Faculty Member in Residence.

Germany (Freiburg & Berlin): Spring. Faculty Member in Residence.

Greece (Athens): Fall, 4 courses.

India (Jaipur): Winter, Offered odd years. Faculty Member in Residence.

Ireland (Galway): Fall, 4 courses. Offered as part of the Partnership in Global Education. Faculty Member in Residence.

Italy (Florence): Spring, Faculty Member in Residence.

Italy (Sicily): Spring, Offered odd years. Faculty Member in Residence.

National Health Systems (USA, Canada, Netherlands, Scotland & England): Summer, Faculty Member in Residence.

Russian Language Program (TBA): Spring, Faculty Member in Residence.

Spain (Seville): Fall, Offered odd years. Faculty Member in Residence.

Vietnam: Fall, 4 courses. Offered as part of the Partnership in Global Education.

Study Abroad/Exchange

England (York): Fall, Faculty Member in Residence.

Domestic Program

Silicon Valley (San Francisco): Winter, Faculty Member in Residence.

Exchanges

The College has the following exchange programs:

Belgium (Antwerp): Fall, 4 courses/4 Union credits, at the University of Antwerp in Belgium, for Economics majors.

France (Lille): Winter, 6 courses/3 Union credits, at the IESEG School of Management in Lille, France, for Economics majors.

Japan (Akita): Fall, 4-courses totaling 12 credit hours/4 Union credits, at the Akita International University of in Japan.

Turkey (Ankara): Fall and Winter/Spring, 4 courses/4 Union credits at Middle East Technical University (METU)

Non-Union Study Abroad

Non-Union Study Abroad programs allow students who are primarily juniors the opportunity to participate in study abroad programs through other colleges and universities, provided that the program addresses a curricular need that cannot be met by a Union program. Normally these programs take place in countries in which Union does not have an existing term abroad or exchange program.

Detailed proposals for non-Union programs must be submitted no later than the third week of spring term the year prior to the time when the study abroad would take place. Students should refer to the International Programs website for deadlines. The Liaison Committee on Study Abroad approves non-Union proposals. The student must demonstrate readiness and preparation to undertake the proposed course of study and provide details of a feasible plan of study that is well-integrated with the student's academic work at Union. There are two options for non-Union study abroad programs: winter/spring non-union study abroad and the full year William Cady Stone Fellowship.

Generally, semester programs give credit for four or five courses. Students may use one or more of the following methods to close the credit gap such that students earn 6 Union credits total:

- If the host institution for the program will allow an additional course for an additional fee, Union will pay that fee.
- Students may take one or more free fourth courses at Union during the academic year.
- Students may take one or more summer school courses at Union College. Course tuition will be waived, but the student will be responsible for room and board.
- Students may take one or more summer school courses at another accredited institution for transfer credit. Union will pay tuition for the course(s), but not room and board.
    - For courses taken at another institution please note that Union's transfer credit guidelines will apply.
    - Students will need to apply for transfer credit approval for each course.
    - Courses cannot be taken at a community college unless approved by the Dean of Studies.
    - Transfer credit will not be granted for online courses.
    - Course work at other colleges will be recognized only if a minimum grade of a "C" is achieved (pass/fail grades are not allowed).
    - Courses taken as part of the transfer credit approval process to make up for credit gaps created by taking a non-union term abroad will count towards credits to graduate, yet the grades will not be recorded on a student's Union College transcript nor factored into a student's cumulative academic average.

The more common non-Union study abroad option, this opportunity takes place during winter and spring terms with the student enrolling in Spring semester course offerings from other colleges and universities.

Fellowships

Full Year William Cady Stone

The William Cady Stone Fellowship allows only one student per year to participate in a full year abroad. Students applying for this fellowship should be able to explain the benefits of a full year study abroad program at an accredited institution of his or her choice over a semester/trimester program. Additional information can be obtained from the International Programs office and on its website.

Students are billed Union College's comprehensive fee for fall, winter and spring terms and Union College will pay the tuition, room, and board to the host institution.

Three Week Klemm International Internship Program

The Klemm Fellow International Internship Program is a highly selective program which places Union students in a foreign country where they work as an intern in a local organization and stay with a local host family for three weeks during the winter break. Projects Abroad is Union's partner organization and arranges the internships and host families for Union. Additional information can be obtained from the International Programs office and on its website.

All program costs are covered by the Klemm Fellow International Internship Program, except for incidentals and informal weekend excursions.

Independent Study Abroad

The Independent Study Abroad Program allows one Union College student per academic year to study abroad at an international college, university, or institute during his/her junior or senior year. The proposed program of study must meet a curricular need that cannot be met by a Union or Non-Union term abroad; it must also take place in a location that cannot be covered by a Union or Non-Union term abroad. A student applying for an ISA must directly enroll in an international college, university or institute. The ISA student must enroll in one or two courses at a university, college or institute in the host country (the equivalent of three courses per term). A student may also arrange with a Union College faculty member to do a course or courses (depending on total number of courses taken) as an approved independent study, research project, service-learning project or internship. The student must identify a Union College faculty member who has agreed to supervise and grade the academic work and to serve as a resource for the student while on the ISA.

An ISA must take place during the winter and/or spring term. Detailed proposals for ISAs must be submitted no later than the fifth week of winter term the year before ISA study would take place. Students should refer to the International Programs website for deadlines. The Liaison Committee on Study Abroad approves ISA proposals

Mini-Term Programs

Every year Union College offers a variety of mini-terms. A mini-term is a three week program running either over winter break or at the beginning of summer break. Mini-terms have been offered in Argentina, Bali, China, Egypt, England, France, India, Italy, New Zealand, Senegal, South Africa, Spain, and domestic locations such as the Adirondacks and, New Hampshire Presidential Primary program. Mini-terms carry an additional tuition charge and yield one course credit. They cannot be combined with two courses in another term as one term's tuition.

Jewish Studies

Director: Professor P. Bedford (Religious Studies)

Jewish Studies Minor

Requirements for the Minor:

The Jewish Studies Minor allows students to examine aspects of Jewish history, culture, and Hebrew language in an interdisciplinary manner, drawing on relevant classes taught in various departments and programs. Students require seven classes to complete the Minor, which must include three classes in either Biblical Hebrew (HBR 111 , HBR 112 , or HBR 113) or Modern Hebrew (HEB 100 , HEB 101 , or HEB 102) and at least two classes at the 200-level or above taken from the list below. Independent Study classes can be counted towards the Minor with the permission of the Director.

AMU 125 - World Religions and Music

Course Units: 1.0 Music, deemed by some to be a gift from the Divine, continues to play an important role in the histories of all religions. Through an examination of three religions - Buddhism, Judaism, and Christianity - students will come to an understanding of the intricate relationships among music, theology, liturgy, ritual, and human religious expressions in different cultures and at different time periods. **CC:** HUM, LCC **ISP:** REL

GER 403 - Shoah: Literary, Artistic and Filmic Representations of the Holocaust

Course Units: 1.0 Comparing and contrasting works of German and German-Jewish writers. **Prerequisite(s):** Any 300-level course or permission of the instructor. **CC:** LCCG, HUM, HUL

HBR 111 - Biblical Hebrew 1

Course Units: 1.0 Study of elementary Biblical Hebrew grammar with selected readings from the Hebrew Bible. **CC:** HUM

HBR 112 - Biblical Hebrew 2

Course Units: 1.0 Continuing study of elementary Biblical Hebrew grammar with selected readings from the Hebrew Bible. **CC:** HUM, LCCB

HBR 113 - Biblical Hebrew 3

Course Units: 1.0 Completion of the study of elementary Biblical Hebrew grammar with selected readings from the Hebrew Bible. **CC:** HUM, LCCB

HEB 100 - Basic Hebrew 1

Course Units: 1.0 This course introduces students to the Hebrew language and helps them with basic reading, speaking, listening and writing skills, with particular and basic attention given to Hebrew conversation, cultural diversity, and writing systems. **CC:** HUM, JWOL

HEB 101 - Basic Hebrew 2

Course Units: 1.0 Continuation of HEB 100 . **CC:** LCCH, HUM, JWOL

HEB 102 - Basic Hebrew 3

Course Units: 1.0 Continuation of HEB 101 . **CC:** LCCH, HUM, JWOL

HST 128 - The American Jewish Experience

Course Units: 1.0 Jews arrived in Britain's American colonies in 1654. In the space of 350 years their numbers increased dramatically and they made significant contributions to a plethora of areas in American society. Jews and Judaism also experienced significant changes through the encounter with the United States. But for all the gains in status and achievement, there are those who speak of a problematic future for American Jewry. **CC:** SOCS **ISP:** AMS, REL

HST 157 - Modern Jewish History

Course Units: 1.0 European, American & Middle Eastern Jewish communities from the fifteenth century, their origins and function within Christian Europe; response of the European Jewry to the Enlightenment and the growth of anti-Semitism and Zionism. **CC:** SOCS **ISP:** REE, REL

HST 158 - The Holocaust

Course Units: 1.0 European and American Jewry in the period 1933- 1945, focusing on modern anti-Semitism, the Nazi world view, German extermination policies, the response of Europe and the United States, and Jewish behavior in a time of crisis. **CC:** SOCS **ISP:** REE, REL

HST 194 - The Modern History of the Middle East

Course Units: 1.0 Problems in the political, social, and economic history of the Middle East in modern times; the demise of the Ottoman Empire; impact of the West upon the Arab world; relations among the new Arab states; and the coming of modernization. **CC:** SOCS

HST 195 - From Abraham to Mohamed and Beyond: The Early History of the Jews

Course Units: 1.0 History of the Jewish people in its first 1600 years from tribal beginnings to the destruction of the second Commonwealth. **CC:** SOCS **ISP:** REL

MLT 339 - The Holocaust in Film: Cinematic Treatments of Violence, Trauma and Memory

Course Units: 1.0 The course examines cinematic representations of the Holocaust in the films of German, German-Jewish, and other European filmmakers. Comparing and contrasting a variety of film genres and cinematic techniques, we explore fundamental questions about the relationships between art and history, representation and experience and memory and responsibility. By considering theoretical and historical readings as well, we situate the films within significant intellectual and historical contexts. **Cross-Listed:** GER 339 **CC:** HUM, LCC, WAC, JCHF, JLIT **ISP:** FLM

GER 339 - The Holocaust in Film: Cinematic Treatments of Violence, Trauma and Memory

Course Units: 1.0 The course examines cinematic representations of the Holocaust in the films of German, German-Jewish, and other European filmmakers. Comparing and contrasting a variety of film genres and cinematic techniques, we explore fundamental questions about the relationships between art and history, representation and experience and memory and responsibility. By considering theoretical and historical readings as well, we situate the films within significant intellectual and historical contexts. **Cross-Listed:** MLT 339 **Prerequisite(s):** GER 201 or permission of the instructor. **CC:** HUM, LCCG, JLIT **ISP:** FLM

PSC 249 - Middle East Politics

Course Units: 1.0 This course is designed to introduce students to the essential political history and dynamics of the Middle East in the 20th century. Students will study the processes through which the states of the contemporary Middle East emerged; the types of political regimes that have evolved in these states; the origins and evolution of the Arab-Israeli conflict; the relationships between Islam and politics; and debates regarding U.S. foreign policy toward the region. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS

PSC 254 - Politics of the Arab-Israeli Conflict

Course Units: 1.0 In this class students will develop an understanding of the origins, development, and essence of the Arab-Israeli conflict as well as the challenges involved in resolving the conflict. The conflict will be examined in its historical, political, and human dimensions. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS

REL 203 - Judaism/Christianity/Islam: Comparative Perspectives

Course Units: 1.0 This course offers a comparative approach to Judaism, Christianity and Islam, three closely related religious traditions. It attempts to draw out commonalities among and differences between these traditions by focusing on their histories, their understandings of God, revelation and tradition, religion and society, and responses to social and political change. **Cross-Listed:** HST 203 **CC:** HUM, LCC, SOCS **ISP:** REL

REL 230 - Judaism and Christian Origins

Course Units: 1.0 We know that Jesus of Nazareth was Jewish, so how is it that Christianity and Judaism became separate religions? This course attempts to answer this question by investigating the nature of the relationship between earliest Christianity and Rabbinic Judaism, drawing out their shared roots in the religion and literature of ancient Israel, and exploring the diverse expressions of second temple Judaism among which the two religious traditions emerged. It also explores their distinctive religious teachings and scriptural interpretations with a particular interest in understanding how and why Christianity and Judaism, despite their commonalities, parted ways and became independent religions. **Cross-Listed:** CLS 230 **CC:** HUM, LCC, WAC **ISP:** REL

Latin American and Caribbean Studies

Director: R. Samet (Anthropology)
Faculty: Professors W. Garcia (Modern Languages), T. Olsen (Music), G. Seri (Political Science); Associate Professors L. Cox (Visual Arts), R. Samet (Anthropology); Assistant Professors M. Mayna-Medrano (Modern Languages), E. McGrath (History), S. Yi (Modern Languages); Senior Lecturer M. Osuna (Modern Languages); Francophone Studies faculty: Professor C. Batson, C. Ndiaye; Associate Professors M. Chilcoat.

This program offers a major, an interdepartmental major, and a minor in the study of the history, culture, language, and politics of the countries of the Latin American and Caribbean region. In addition, students may focus their study on the Atlantic world, on the interaction between the Americas and Africa, and on the experiences of people of Latin

American descent in the United States. Latin American and Caribbean Studies courses are a part of the Common Curriculum (CC), fulfilling literature/ civilization, diversity, and writing requirements.

Latin American and Caribbean Studies (ID), B.A.

Requirements for the Interdepartmental Major:

Eight courses from at least two concentrations: 1. Humanities and Arts; 2. Social Sciences; 3. Student Designed Concentration (e.g., Biology, Environmental Studies, Geosciences, to be designed in consultation with the LACS Director and the student's academic adviser), including:

LAS 101 - Latin American and Caribbean Studies Intro

Course Units: 1.0 This course is an overview of Latin American and Caribbean politics, culture, history, economics, and environmental issues. Through readings, films, discussions, and guest speakers, students gain a solid background in Latin American history and societies. LAS 101 is required for LACS majors/minors and highly recommended for students majoring in Spanish, interested in international or global politics, or planning to apply for full terms or mini-terms to Latin America and the Caribbean. **CC:** LCC, SOCS **ISP:** AFR, LAS

or

FRN 300 - Modern France/La France actuelle

Course Units: 1.0 Studies of contemporary French culture through authentic material, texts, films, radio, and television broadcasts dealing with current historical, political, sociological, and aesthetic issues. **CC:** LCCF, HUM

or

- Subject to the approval fo the LACS Director, successful completion of Portuguese during a full term abroad or an equivalent-level language course in Portuguese or any other official language of Latin America.

and

- One-term senior thesis

Requirements for Honors in Latin American and Caribbean Studies:

To be eligible for honors, a student must (1) attain a minimum index of 3.50 in courses counted toward the major; (2) a cumulative index of 3.30 or better; (3) a grade of "A minus" or higher on the Senior Thesis (a two-term Senior Project Thesis for LACS Majors); and (4) oral exam based on the Senior Thesis before LACS faculty or a presentation of the work at Steinmetz or another public academic venue.

Course Selection Guidelines:

Students seeking to double major in LACS and another subject that also requires a two-term thesis must present a proposal and obtain written permission from LACS director and the other department chair.

Latin American and Caribbean Studies Approved Courses

LACS Courses in Humanities and Arts

Art History

AAH 163 - Latin American and Caribbean Art of the 19th and 20th Century

Course Units: 1.0 An examination of the major aspects of Latin American and Caribbean art from the early 19th through the 20th century. Emphasis is placed on integrating the social and political background of the various cultures with the key artists, artistic issues and movements of particular countries and periods. Topics to be covered include: the influence of the major art academies in Mexico, Brazil and Ecuador, the strong links between art and politics, indigeneity, woman as artist and subject, and the ongoing dialogue with the art of Europe and later the United States. **CC:** LCC, HUM, JCAD, JCHF **ISP:** AFR, LAS

AAH 360 - Seminar: Visual Culture, Race and Gender

Course Units: 1.0 A lecture and discussion-based course concerned with how constructions of race and sexual differentiation are played out across art history and visual culture, focusing on the visual arts of Western Europe and the United States. The first half of the course investigates the constructs of gender and race from antiquity to the middle of the 20th century as expressed in art and visual culture. The second half of the course is a close study of female artists of color living and working in the United States, grouped as African- American, Latina/Chicana, Asian and Middle Eastern and Multi-ethnic. **CC:** LCC, HUM, JCAD, JCHF **ISP:** AFR, AMS, GSWS, LAS

Modern Languages and Literatures

French

FRN 304 - Studies in the French Caribbean

Course Units: 1.0 Exploration of how French colonialism has informed artistic expression in the French Antilles. Taking Martinique as a point of departure, we will examine how colonial and post-colonial subjects represent and are represented through literary, theatrical, and musical productions. Themes to include notions of negritude, creolite, and bilingualism, as well as issues of class and gender. **CC:** HUL, LCCF, HUM **ISP:** AFR, LAS

FRN 307 - Negritude Movement: Point of Departure in Black African and Afro-Caribbean Literatures in French

Course Units: 1.0 This study of the Black diaspora in French in the 1930s examines a variety of political and literary strategies developed in reaction to French colonial policies before the era of official independences. We consider authors such as Cesaire, Damas, Senghor, Fanon, and Sartre to better understand how these writers represent influences on the literatures of decolonization and post-colonial identity. **Prerequisite(s):** FRN 201 , any 300-level or permission of instructor. **CC:** LCCF, HUM **ISP:** AFR, LAS

Spanish

SPN 325 - Staging Conflict: Studies in One-Act Mexican Theater

Course Units: 1.0 This course surveys contemporary one-act Mexican theater focusing on the theatrical devices, trends, and discourses adopted by playwrights to explore conflictive issues in Mexican society and culture: urban violence, generational clashes within the family, sexual diversity, gender roles, consumerism, among others. The course offers an introduction to the study of drama and the analysis of theatrical signs, and it attempts to complement the students' term abroad experience in Mexico by focusing on and contextualizing linguistic and cultural aspects in the texts. Students

read texts by Emilio Carballido, Victor Hugo Rascon Banda, Sabina Berman, Hugo Salcedo, among others. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL **ISP:** LAS

SPN 327 - The Nation at Home: Family and Nationhood in Spanish American Theater

Course Units: 1.0 An introduction to the study of the dramatic genre through the analysis and discussion of representative works by Spanish American playwrights (Triana, Wolff, Diaz, Gambaro, Arguelles, Berman, Canales, among others). Theoretical readings and diverse critical approaches to theater frame the course around the representation of family as a microcosm in which narratives of nationhood are contested, revised, and imagined. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL **ISP:** LAS

SPN 328 - Inquiring Latin American Identities: Reading Context, Space and Cultural Artifacts

Course Units: 1.0 This course examines some aspects of the cultures of Latin America to understand how they have impacted national, local, and individual identities. Latin-American cultures are conceived as processes initiated and sustained by the encounter of radically different cultures that framed and continue to shape people's lives. Particularly, the course explores the impact of gender relations, ethnicity, physical spaces, cultural practices and beliefs on identity. Substantive theoretical readings will complement the course. **Prerequisite(s):** SPN 203 or permission of the instructor. **CC:** WAC **ISP:** GSWS, LAS

SPN 329 - Tradition and Interruption in Latin American Poetry

Course Units: 1.0 Octavio Paz describes modern literature as a "tradition of discontinuity," one that constantly rebels against itself in search of innovation. This course examines Paz's assertion through the study of Spanish American poets, and it aims to introduce students to the genre while surveying major poetic traditions and trends in Spanish America. The course's objectives are centered on strengthening the student's process of language acquisition, developing critical skills, and reinforcing linguistic proficiency and intercultural competence through reading and analysis of poetic texts. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL, HUM, JLIT, JWOL **ISP:** LAS

SPN 330 - Hispanic Women Writers Who Challenged the World

Course Units: 1.0 This course focuses on Latin American and Spanish women's contemporary (from 19th century to the present) short fiction. It centers on the close reading of selected works that deal with some of the most significant formative female experiences and perspectives in contemporary Latin-American societies: maternity, patriarchy, feminicide, among others. The course examines how women's creative expressions explore political and social realities that question the laws and myths surrounding their formation, call critical attention to the foundations and manifestations of a patriarchal order, and offer alternative visions of, or models for, a renewed social life. **Prerequisite(s):** Any two courses from SPN 250-299, or permission of the instructor. **CC:** LCC, HUL, JCHF, JWOL, JLIT, WAC **ISP:** GSWS, LAS

SPN 332 - An Introduction to Afro-Hispanic Literatures and Cultures

Course Units: 1.0 This course exposes students, through selected readings dealing with the black experience in Latin America, to African diaspora literature particular to Spanish- and Portuguese- speaking regions. It bridges various genres and artistic media (narrative, poetry, drama, film, music) in order to provide a general sense - aesthetic, material and cultural, theoretical and cross-temporal - of different manners in which black diasporic expressions have intervened in the re-creation, transformation, and interrogation of Afro identities in Latin America. As such, this course examines these expressions as locutions that enrich our perceptions of social, cultural, economic, religious, gender, and sexual

social orders and identities related to the black experience in the hemisphere. **Prerequisite(s):** Two 250-299 courses, or permission of the instructor. **CC:** LCCS, HUL **ISP:** AFR, LAS

SPN 334 - Cartographies of Disasters

Course Units: 1.0 The association between Latin America and catastrophe paints a unidimensional picture that does not correlate with the region's political, social, and geographical reality. With its history of colonialism, natural disasters, civil wars, dictatorships, and economic and political crises, Latin America is repeatedly constructed on the myth of disaster--whether natural or man-made. Disaster, by definition, is a serious disruption that causes great damage and involves human, material, economic and/or environmental loss. As such, it oftentimes leaves no room for discussion even if what constitutes a disaster can be subjective. In this class, we will tease out the problematic association between disaster and Latin America by exploring the effects of a disaster beyond the physical. Through concrete examples and its cultural representations, we will study the ways in which disaster is defined and experienced while analyzing its implications, political and otherwise. By drawing connections between disasters, their representations, and their relationship to politics and history, we will discuss issues including identity, class, power, extraction, and accessibility. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUM, WAC **ISP:** ENS, GSWS, LAS

SPN 336 - Troubling Gender in Contemporary Argentine Literature and Cinema

Course Units: 1.0 This course is an introduction to contemporary Argentine literature and film with a focus on gender dynamics. We will study representative works in various genres (narrative, drama, poetry, and film) within their cultural context. Although there is a brief survey of canonical authors from the first two thirds of the 20th century, the course emphasizes cultural production after 1990. Besides the literary texts and films, we will also discuss substantive readings related to the course topics. Discussions will center on how writers, playwrights, and filmmakers deal with the following topics: the gendering of national identity; the construction of gender and sexual identities; the impact of toxic masculinities; gender notions under repressive regimes; the representation of LGBTQ subjectivities; human trafficking and violence against women. In addition to acquainting students with significant works of Argentine literature and film, the course seeks to strengthen speaking and reading abilities, to sharpen writing and critical skills, and to familiarize students with critical approaches to various literary genres and film. Class discussions and writing assignments are in Spanish. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL, HUM, JLIT, JWOL **ISP:** GSWS, LAS

SPN 351 - Border Identities

Course Units: 1.0 This course explores Chicano culture through essays, literature, and films that represent current and historical issues of the Mexican-American border. Readings will provide research and data, while literary texts and films will offer varying interpretations and representation of the border culture that will allow you to consider critically the complexities of 20th and 21st century issues that include immigration, working conditions, socio-economic status, the role of women, and identity. The course should also help you improve your proficiency in Spanish at all levels: building vocabulary, speaking, listening, reading, and writing. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL **ISP:** LAS

SPN 352 - Imagining Latinx Identities

Course Units: 1.0 This course is an introduction to contemporary US Latinx literature with a focus on Cuban-Americans, Dominican-Americans, Mexican-Americans/ Chicanxs, and Puerto Ricans. We will study representative works of various genres (narrative, drama, poetry, and film) within their cultural context. Our exploration of US Latinx production seeks to reflect on the plurality and diversity of (self-) representation and the various ways in which Latinx authors and artists imagine and construct their identities and communities in the United States. In addition to acquainting students with significant works of US Latinx literature, the course seeks to strengthen reading ability and

sharpening writing and critical skills. Class discussions and writing assignments are in Spanish. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL **ISP:** LAS

SPN 375 - Reality Interrupted in Hispanic Narratives

Course Units: 1.0 This course explores the disruption of reality in narratives from the Hispanic world (Spain, Latin America, and US Latinx communities), surveying the myriad representations of reality through the subconscious, the magical real, and the unreal or fantastic. In addition to acquainting students with major literary trends affecting the depiction or construction of reality in Hispanic literature, the course seeks to strengthen speaking and reading abilities, to sharpen writing and critical skills, and to familiarize students with critical approaches to various literary genres and film. Class discussions and writing assignments are in Spanish. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL **ISP:** LAS

SPN 376 - Down to Earth: Cross-Cultural Explorations of the Hispanic World

Course Units: 1.0 This course furthers the development of cultural competency while maximizing language skills and providing the foundation for further studies in language, literature, and culture. "Down to Earth" broadens students' knowledge of the Spanish-speaking world by focusing on shared past and present issues affecting people living in similar geographic regions. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUM **ISP:** LAS

SPN 380 - What's Love Got to Do with It: Gender and Nation in Hispanic and US Latino Literatures

Course Units: 1.0 An introduction to the study of literary genres thematically anchored in the intersection of gender dynamics, national politics, and the construction of identity (sexual, cultural, national). Students will read narrative, poetry, and drama from Spain, Spanish- America, and U.S. Latino communities. Theoretical readings and diverse critical approaches to literature frame the course around the portrayal of romantic/sexual relationships that acquire broader dimensions when scrutinized from the perspective of gender and national politics. How are gender and sexual identities inscribed in national identity? How cultural artifacts project and reflect the gendered body of the nation? **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** LCCS, HUL **ISP:** GSWS, LAS

SPN 381 - Hauntings in Hispanic Fiction

Course Units: 1.0 Ghost stories evoke both fear and delight in readers, listeners, or viewers. But beyond entertaining us, tales of haunting can reveal memories, traumas, and social figures that an individual or society has repressed or maybe just never noticed before. For example, a ghostly apparition may serve to remind a nation of historical violence that it has sought to forget. Or it may represent a silenced social figure clamoring to be heard from the margins. In this course we will explore haunting as a theoretical concept and storytelling device. To do so we will analyze a variety of ghostly narratives - both literary and cinematic - from the Hispanic world. As we summon these fictional phantoms and work to interpret their messages, we will situate each text within its particular cultural, sociopolitical, and intellectual contexts. **Prerequisite(s):** Two 250-299 level courses, or permission of the instructor. **CC:** HUM, HUL, LCCS, WAC **ISP:** GSWS, LAS

SPN 401 - XX and XXI Century Latin American Narrative

Course Units: 1.0 This course examines a selection of some of the most representative but also less canonical manifestations of the Latin American novel, in the context of cultural and national formations that marked Latin American history. By highlighting the particular developments and contradictions explored in these works, students will reflect upon political movements, artistic trends, and intellectual debates that have shaped Latin America. **Prerequisite(s):** Two 300-level courses. **CC:** LCCS, HUL **ISP:** LAS

SPN 406 - Film of the Mexican American Border

Course Units: 1.0 Through the study of 9 films, students will gain an understanding of cinematic techniques and the ways in which the directors of these films use them to convey differing perspectives of the Mexican-American border, with emphasis on the Mexican side. The films will be presented thematically in reference to the border as the perceived locus of perversion and violence, emigration/immigration, and identity. Readings for the course will come from texts on film, and from book chapters and articles. By the end of the term students will have a better understanding of the history and social dynamics of the Mexican- American border. They will also better understand how to "read" film through different theoretical approaches. They will also be able to discuss and write analytically about what a director does and why. **CC:** LCCS, HUM **ISP:** AMS, LAS

SPN 408 - Digital Storytelling Lab

Course Units: 1.0 In this highly interactive, student-centered and exploratory course, students will engage in a three-step learning process that combines theory, analysis, and production of electronic literature and digital storytelling from the Hispanic world. The class will explore the theory and meaning behind microfiction, hypertext and hypermedia, and through hands-on "labs" students will travel through digital space and analyze concrete examples of electronic literature. Both theory and analysis will inform the creation of digital stories on two different digital storytelling platforms. **Prerequisite(s):** Two 300-level SPN courses. **CC:** LCCS, HUL **ISP:** LAS

SPN 417 - Death and Revenge in the Southern Cone

Course Units: 1.0 This course examines the dictatorship in Argentina, Chile, and Uruguay. Through analysis of cultural products including narrative, theater, and film, students will reflect on themes and questions such as the effects of torture and terrorism on society, the constraints of censorship, and revenge. We will read texts by Marta Traba, Luisa Valenzuela, Diana Raznovich, Eduardo Pavlovsky, Ariel Dorfman, among others. Films will include Camila and Death and the Maiden, among others. **Prerequisite(s):** Two 300-level courses. **CC:** LCCS, HUL **ISP:** GSWS, LAS

SPN 418 - Readings on Contemporary Mexican Theater

Course Units: 1.0 The course explores Mexican theater from the 1950's to the present focusing on playwrights that seek to stage and imagine the nation and their communities either contesting or legitimizing hegemonic narratives of cultural uniformity, normative gender and sexual roles, and a cohesive political state. We will analyze dramatic texts by Luisa Josefina Hernandez, Emilio Carballido, Hugo Arguelles, Leonor Azcarate, Víctor Hugo Rascon Banda, Jesus Gonzalez Davila, Sabina Berman, Hugo Salcedo, among others. **Prerequisite(s):** Two 300-level courses. **CC:** LCCS, HUL **ISP:** LAS

SPN 424 - Imaginarios urbanos: Interventions in the Latin American City

Course Units: 1 This course explores Latin American cities as sites where artists engage with public space in order to both call attention to injustices and experiment with practices of modifying urban life. These interventions respond to the conditions that shape each city to reveal the power relations at work. Students will examine and analyze efforts to reimagine a more democratic city as presented in short stories, stencil, graffiti, installations, escraches, photography, street theater, and teatro de la invasión. **Prerequisite(s):** Two 300-level SPN courses. **CC:** HUL, HUM, LCCS, WS, GCAD, GLIT, GWOL **ISP:** GSWS, LAS

SPN 431 - Latin America in Colonial Times

Course Units: 1.0 This course examines European, indigenous, mestizo and African chronicles of the encounter between Europeans, slaves and native Americans that started in the fifteenth century with the emergence of the "New World." By looking closely at the colonization and subsequent reconfiguration of communities and their cultures, the

course analyzes the chronicle and representation of this trans-Atlantic collision and exchange from a historiographic and literary perspective. We will read travel journals, poetry, drama, histories, ethnographies, and other types of textual/visual production such as films and codices, a diverse production that bore witness to the many ways in which the various peoples of and in the Americas documented, perceived, and imagined the old and the new, themselves and others. **Prerequisite(s):** Two 300-level courses. **CC:** LCCS, HUL **ISP:** AFR, LAS

SPN 432 - Islands Adrift: Race, Politics, and Diasporas in the Hispanic Caribbean

Course Units: 1.0 Introduction to the literatures and cultures of Cuba, Dominican Republic, and Puerto Rico centering on how the region continues to approach its development tempered by an array of colonial legacies-from the slave plantation system to globalization-that impact on social, political, economic, and cultural dynamics. Diverse critical approaches will frame the analysis of literary, visual, and musical texts by Luis Pales Matos, Nicolas Guillen, Pedro Mir, Heberto Padilla, Tomas Gutierrez Alea, Aida Cartagena Portalatin, Celia Cruz, Ana Lydia Vega, Juan Luis Guerra, Reinaldo Arenas, Mayra Montero, among others. **Prerequisite(s):** Two 300-level courses. **CC:** LCCS, HUL, HUM, WAC, JLIT, JWOL, WAC-R **ISP:** AFR, LAS

SPN 433 - Latin American Colonial Crossroads at the Movies

Course Units: 1.0 This course explores critically filmic approaches to colonial Latin American literature and history. Its main objectives are to analyze films preoccupied with historical events and life in colonial times, to engage the filmic representation of the cultural, political, and religious encounters and tensions informing our desire to revisit contact among Amerindians, African slaves and Europeans, and to familiarize students with debates pertaining to reconstructing the colonial past for contemporary consumption. **Prerequisite(s):** Two 300-level courses. **CC:** LCCS, HUM **ISP:** AFR, FLM, LAS

Modern Languages in Translation

MLT 281 - Screening Identities in Latin American Cinema

Course Units: 1.0 A survey of the main trends in film production in Latin America since the 1950s. Readings and discussions on issues of film history, aesthetics, representation and reception will frame our critical reflection on the construction of various types identities in some of the national cinemas across Latin America. **CC:** HUM, LCC, JCAD, JCHF, WAC **ISP:** FLM, GSWS, LAS

MLT 283 - Beyond the Sunny Paradise: Caribbean literature and politics

Course Units: 1.0 This survey course offers an interdisciplinary study of Caribbean literature focusing on the political history of the region from 1898 to the present. Besides the literary texts, films and substantive readings will contribute to an examination of four main topics: Legacies of Colonialism; Race and Ethnicity; Constructed Identities; and the Caribbean Diaspora. Students will be exposed to the rich and often overlooked literary production by Caribbean writers, drawing lines of comparison and contrast among writers from several of the islands, and identifying the common literary elements and devices shared by them. The course seeks to promote a reflection on how Caribbean intellectuals explore and deal with issues of self-determination and the construction of identities. **CC:** HUL, LCC, HUM, WAC, JCHF, JLIT **ISP:** AFR, LAS

MLT 284 - Popular Religion and Politics in Latin America

Course Units: 1.0 In this course we will examine the connection between politics and popular religions in Latin America, taking a critical view of several of their manifestations without losing track of the language and "sciences" historically used to describe them. We will engage biblical, anthropological, videographic, ethnohistorical and cultural theory texts as well as oral histories and collective memories. The final goal is to tease out those ideas that have

traditionally defined the terms in which we understand and explain the "popular" in religious behavior; to understand better the conflicted relationship between "popular" cultural and institutional spaces; and finally to understand why the evolution of popular religions in Latin America cannot be examined without also taking into account their political economy. **CC:** HUM, LCC **ISP:** AFR, LAS, REL

MLT 286T - Gender and Identity in Contemporary Latin American Cinema

Course Units: 1.0 This course offers an interdisciplinary study of contemporary Latin American cinema focusing on issues of representation, reception and spectatorship, and the construction of (national, cultural, gender, and racial) identity. Besides the films, reviews and substantive readings will contribute to an examination of five main topics: 1) Constructions of Gender; 2) Representations of National Identity; 3) Race and Class; 4) Queer Images; and, 5) Imagining Marginality. All films studied in class will link two or more of these topics. **CC:** HUM, LCC **ISP:** FLM, GSWS, LAS

MLT 287 - Social Realism and Cinema in Latin America

Course Units: 1.0 This course examines different styles of documentary and realist film making from Latin America. It looks critically and with a "film-eye" at the aesthetic and socio-political meanings of conventional and experimental films dealing with social reality and its representation. We will analyze a selective, but historically contextualized and engaging, collection of films that include, among others, Luis Buñuel's Los Olvidados (1950), Hector Babenco's Pixote (1981), and Fernando Meirelles' City of God (2002). **CC:** HUM, LCC **ISP:** FLM, LAS

MLT 288 - Torture and Dictatorship in Latin American Literature

Course Units: 1.0 This course explores Latin American literature and film in the twentieth century, with a particular focus on the dictatorships and the early years after the military coups in Argentina, Chile, and Uruguay. Readings include texts by writers who stayed in their countries and wrote under the confines of censorship, texts by writers in exile, and theoretical texts on violence, torture, and censorship. Some themes and questions we will discuss are constraints of censorship, the gendering of the nation, control and punishment. **CC:** HUL, HUM, LCC **ISP:** LAS

MLT 289 - Literature of the Mexican-American Border

Course Units: 1.0 This is a class in literature, film and essays from both sides of the Mexican-American border. This course is designed to give students an under-standing of the complexities of the history, culture and sense of identity of residents from both sides. The class will be discussion based and will focus on the close readings of novels, poems, short stories and plays. **CC:** HUL, HUM, LCC **ISP:** AMS, GSWS, LAS

MLT 293 - Made in New York: Puerto Rican and Dominican Transnational Identities in American Literature & Cinema

Course Units: 1.0 The course is a survey of the cultural production and representation of the Dominican and Puerto Rican communities in New York City from the late 1950's to the present. Through the analysis of literary texts (narrative, poetry, theater) and films, students are encouraged to reflect on the forging of transnational identities and other issues (race, cultural identity, gender and masculinities) related to these two Caribbean diasporic communities in the U.S., and on the politics of their representation within the American cultural economy. **CC:** HUL, HUM, LCC **ISP:** AFR, AMS, FLM, LAS

MLT 297 - Performing Masculinities in Literature, Cinema, and Popular Culture

Course Units: 1.0 This is an exploration of how masculinities (and maleness) are performed and how men perform gender. The course is a survey of literary and cinematic texts from around the world, with emphasis on Hispanic and Latinx communities (from Spain, Spanish America, and the USA) that adopt cross-dressing as a subversive device to question and delegitimize authority at various arenas (heteronormative gender roles, sexual and national identities, state politics and citizenship, and cultural hegemony). It also seeks to dissect binary understandings of gender while exploring the concept as a performative social construct, and establishing connections with and drawing examples from literary production, cinema, and popular culture. From this angle, emphasis will be placed on the performance of socially regulated gender roles whose scripts are constantly altered and in flux, albeit at times guarded violently by diverse social members and institutions. Beyond the analysis of literary texts and films, the course incorporates critical theory and cultural artifacts (music videos, magazine ads, billboards, art works) that frame the class discussions and enable us to connect the primary texts with local and global discourses around social demarcations of gender. **CC:** HUL, HUM, WAC **ISP:** FLM, GSWS, LAS

Music

AMU 133 - Music of Latin America

Course Units: 1.0 Latin American music-cultures approached through live performance, lecture, video, and audio. Survey samples from folk, popular, and classical traditions, with special emphasis on the musics of Cuba and Brazil. **CC:** LCC, HUM **ISP:** AFR, LAS

AMU 235 - Latin Percussion Workshop

Course Units: 1.0 The goal of this course is to give students an in-depth understanding of Afro-Cuban and Afro-Brazilian music through studying genres (rumba, son, mambo, salsa, comparsa, samba, forro) from inside the percussion section. In addition to ensemble work, students will research and transcribe Latin music styles. The course will culminate in a public performance/presentation at the end of the term. Entry to the course by audition; previous instrumental experience desirable but not required. **CC:** LCC, JCAD, JCHF **ISP:** AFR, LAS

LACS Social Sciences Courses

Africana Studies

AFR 100 - Introduction to Africana Studies

Course Units: 1.0 An interdisciplinary introduction to the field of Africana Studies. This course will examine the issues and perspectives-social, economic, political, historical, and cultural-of the peoples of Africa and the African diaspora. **CC:** LCC **ISP:** AIS, AMS, LAS

Anthropology

ANT 227 - Policing the Americas: Law and Order in the Western Hemisphere

Course Units: 1.0 The Western Hemisphere is a violent place: drug wars in Mexico, street gangs in Central America, mass killings in the United States, and everywhere soaring rates of violent crime. What kinds of responses are emerging to problems of law, order, and public security in the Americas? How are these responses reshaping our societies? To what extent is the current situation the legacy of failed security policies? What is the role of the police and policing in all of this? This class adopts an anthropological perspective on the practice of policing. It looks at policing as the production of law and order-not just by local cops on the beat but also by actors involved in national and international

security. The focus is on the Western Hemisphere and the influence of the United States on the ideals, institutions, and practices of policing. Key topics include: immigration, incarceration, deportation, frontiers, the movement of licit and illicit goods, democratic rights, and the regional impact of U.S. security initiatives including the Cold War, the War on Drugs, and the War on Terrorism. These topics will be grounded in studies of policing and police reform in the United States, Brazil, Colombia, Guatemala, and Mexico. By the end of the semester, students will have a working knowledge of critical issues in contemporary policing as well as the legal, socio-cultural, and economic factors behind the emerging models of police in the Americas. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AMS, LAS, LAW

ANT 237 - Gangs and Youth Violence

Course Units: 1.0 Bloods. Crips. Mara Salvatrucha (MS-13). The 18th St. Gang (M-18). Latin Kings. The names have become synonymous with senseless violence. Both feared and fetishized, the street gang became a focal point of urban politics in the United States and Latin America during the late twentieth century. Beginning with the neoliberal reforms of the 1980s, young, poor, minorities have found themselves at the center of a socio-economic crisis that has been accompanied by the rise of zero-tolerance policing. For the purposes of this class, the youth gang phenomenon will serve as a window in to the experience of racial, ethnic and economic marginalization under late capitalism. We will explore the context that gives rise to gang violence through a combination of anthropological, sociological, and historical approaches. By the end of the quarter, students will be familiar with the macro-social factors that shape both gangs and the politics of urban violence in the Americans. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AFR, AMS, LAS

ANT 244 - Urban Anthropology

Course Units: 1.0 Throughout history cities have been celebrated as spaces of inclusion and diversity, so that it is all too easy to overlook the pervasive reality of exclusion, poverty, and injustice. This class looks at the promise and perils of urbanization in the 20th and the 21st centuries. The approach is anthropological, however the course also draws on materials from geography, urban planning, and political economy to understand the history, development, and everyday experience of urban space **CC:** LCC, SOCS, GCHF, GSPE **ISP:** LAS

ANT 283 - Peoples and Cultures of Latin America

Course Units: 1.0 Examines the peoples and cultures of Latin America in historical and contemporary perspectives. Uses case studies, accompanying articles, and a range of media. Themes include: colonialism, identity politics, expressive culture, religion, gender, race, ethnicity, nationalism, and political economy. **CC:** LCC, SOCS **ISP:** LAS

History

HST 135 - Latinos In/As U.S. History

Course Units: 1.0 What does U.S. history look like if we consider it a Latin American nation? This course explores the history of El Norte through the eyes of border-crossing, indigenous communities, Spanish settlers in the South and West, and the Latin American and Caribbean immigrant populations that have made their homes across the country since its founding. We end with a particular focus on Latin American and Latinx communities in 21st-century New York. **CC:** SOCS **ISP:** AFR, AMS, GSW, LAS

HST 171 - Europe, Africa, and the Americas in the Era of Columbus

Course Units: 1.0 A study of the relationship of Spain and Portugal with Africa, Asia, and the Americas from the early fifteenth through the late eighteenth centuries. The course examines the early civilizations of Africa, Europe, and the Americas in the era before the voyage of Columbus and the interaction among these three worlds in the centuries after the Encounter. It concludes with an examination of the cultural legacy of Africa and Europe on the indigenous societies of the Americas and the subsequent development of multicultural and multiracial independent nations. The central role

of gender relations between the civilizations, the gendered conflict that characterized the era of exploration, and the role of masculinity are all examined. **CC:** LCC, SOCS **ISP:** GSWS, LAS, REL

HST 172 - Reform and Revolution in Latin America and the Caribbean

Course Units: 1.0 Examines the political and social changes in Latin America as a result of the nineteenth and twentieth century reform and revolutionary movements, including the Unidad Popular government in Chile under Salvador Allende and its overthrow by General Pinochet and the subsequent dictatorial rule. The effect of the 1959 Cuban Revolution on Latin America; the revolutionary uprisings in Central America, in Chiapas, Mexico, and against the military government of Argentina form other key areas of examination. The course places special emphasis on the intersection of gender, race and class conflicts and movements, with particular attention to the role of emerging feminist movements. **CC:** LCC, SOCS **ISP:** AFR, GSW, LAS

HST 173 - History of the Caribbean and Central America

Course Units: 1.0 This course covers the history of the Caribbean and Central America from pre-colonial times to the present. It includes a survey of the impact of both extinct and enduring indigenous cultures, the rivalries among Spanish, Dutch, French, and British powers for control of the Caribbean, and the history of slavery, the plantation system, rebellions and revolutions against enslavement, colonialism, and modern imperialism. The course ends with the early 21st-century struggles for self-determinism among the nations of the region. **CC:** LCC, SOCS **ISP:** AFR, LAS

HST 270 - History of Latin American Popular Culture

Course Units: 1.0 This course examines the history of Latin America and the Caribbean in the 19th and 20th centuries. Our "texts" for this course are novels, political cartoons, movies, TV shows and music, along with traditional history books. The course seeks to examine the way that Latin American societies have depicted themselves in the popular media, the way that the United States has viewed and absorbed Latin American culture, and the ways that historians have sought to explain the transformations in various countries by examining popular culture. Since Latin American and Caribbean cultures are so closely linked to the United States, and because an increasing number of U.S. citizens are of Latino descent, this course offers valuable insights into the transformations occurring in US culture. **CC:** LCC, SOCS **ISP:** AFR, LAS

HST 271 - History of Mexico

Course Units: 1.0 Mexican civilization from its origins to the present - ancient Maya and Aztec cultures; the Spanish conquest; colonial society; the independence wars; Mexico in the nineteenth and twentieth centuries, especially the Mexican Revolution; and current cultural, social, and economic issues, including the Zapatista rebellion, NAFTA, and the changing nature of the borderlands region between Mexico and the USA. **CC:** LCC, SOCS **ISP:** LAS

HST 272 - History of Brazil

Course Units: 1.0 This is a survey interpretation of Brazilian history from the days of Portuguese expansion to the present, including the contrast between the urban and rural areas, the Atlantic slave trade, slavery and the resistance to it, the plantation system and post-abolition race relations, the destruction of the rainforest, the emergence of democratic structures in modern Brazil, and the rise of Brazil as a 21st century economic powerhouse. **CC:** LCC, SOCS **ISP:** AFR, LAS

HST 274 - Social and Political Movements in Latin America

Course Units: 1.0 This course examines the history of recent social movements in Latin America. We will explore a variety of issues including democracy, racism, class, gender and ethnic divisions, human rights, globalization and

popular movements. Rather than viewing Latin America from a North American point of view, we will examine how Latin Americans see themselves and how their culture, economics, and politics have developed in different directions than other parts of the world, especially the United States and Europe. While social movements have at times erupted into full-fledged revolutionary upheavals, more often Latin American struggles have been ongoing, such as factory occupations, land seizures, and demonstrations for gender equality, workers' rights, indigenous autonomy, protection of the environment, and students' rights. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AFR, GSW, LAS

HST 275 - United States Foreign Relations and Modern Latin America

Course Units: 1.0 This course is about relationships, exchanges, and tensions among the people and nations of the Americas from the mid 19th century to the present. The most powerful foreign influence (political and otherwise) in Latin America has consistently been the US, often with quite negative consequences. In the 21st century relations between the US and Latin America have changed dramatically. China has replaced the US as the most important trading partner for several countries, particularly Brazil, the largest economy of Latin America. In addition, the US is experiencing a demographic transformation with an increasing number of immigrants from Latin America making up the populations of just about every state. The history of the US and Latin American is increasingly a "shared" history. In this course we will look at interconnections, comparisons, and the common links between Latin America and the US in what is now a history of both foreign and domestic relations. **CC:** LCC, SOCS **ISP:** LAS

HST 323 - Race and Revolution

Course Units: 1.0 This course examines the American Revolution and the Haitian Revolution. With regard to the former, it addresses the "Jefferson question" - that is, how could the author of the Declaration of Independence be the owner of over 200 slaves. Therefore, it deals with competing interpretations in the Early American Republic of the Ideology of "liberty" and "equality." Next, the course delves into the far more radical Haitian Revolution, the only successful slave revolution in history. It will deal with the influences of the American and French revolutions on the French New World colony of St. Domingue that made the Haitian revolution possible. Finally, the course examines the impact of the Haitian Revolution on slavery and the anti-slavery movement in the United States. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AFR, AMS, LAS

HST 372 - Sex, Race and Gender in Latin America

Course Units: 1.0 This course examines the history of the intersection of race, sex and gender in Latin America from the pre-colonial period to the present, especially as evidenced in the changing status of women and the patriarchal order. This history traces the effect of broader societal transformations such as colonialism, imperialism, and economic and political developments on the gender division of labor and the construction of class, race and national identity. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** GSWS, LAS, REL

HST 471 - Seminar in Latin America: The Cuban Revolution

Course Units: 1.0 This seminar examines the history of Cuba from the 1959 triumph of the revolution led by Fidel Castro and the 26th of July Movement, through the several decade-long period in which Cuba struggled to build an independent communist nation aligned with the Soviet Union, into the post-Cold War decades since the demise of the Soviet bloc and ending with the recent opening of relations with the United States. Students will write a seminar paper on a topic of their choice, utilizing primary and secondary source. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS, WAC, WAC-R **ISP:** LAS

Political Science

PSC 236 - Police, Security and Biopower

Course Units: 1.0 While the development of a political community presupposes a certain level of security, the second half of the 20th century shows how unfortunately frequent it has become for people to turn into victims of the devices they set to secure themselves. How can the tensions between the political and security be addressed to enhance, not to destroy, the freedom and creativity that characterize a political community? Organized as a seminar, and heavy in contemporary political theory, this course will explore both practical and theoretical relations between political communities and the pre-political preconditions for their preservation. **CC:** LCC, SOCS **ISP:** LAS

PSC 243 - Latin American Politics

Course Units: 1.0 This course offers a working knowledge of Latin America's current politics, trends, and challenges. Years after democratization, regular elections are in place, and support for democracy in the region seems widespread. Still, as local traditions infuse the principles of liberal democracy, politics in Latin America reveal unique traits. Exploring the political as an interpretive endeavor, the course's readings, assignments, and class discussions will help to identify key political institutions, traditions, and cleavages, as well as forms of agency and leadership, both in specific countries and at the regional level. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** LAS

PSC 244 - The Politics of Extraction in the Americas

Course Units: 1.0 As the shrinking of the Amazon keeps making headlines, extractive activities including large-scale mining, logging, and agriculture are rapidly transforming the landscape of the Americas. This class surveys main extractive activities across the hemisphere, their output and political impact. While feeding expanding markets, extractivism has been linked to land grabs, forced displacement, conflicts, state and paramilitary violence, lobbying, corruption, and coups d'état. In exploring trends and cases, we will review concepts, theories, and alternatives to extractivism, including women and indigenous-led traditions of protecting different forms of life and Earth itself. By taking this course, students will develop informed perspectives regarding which extractive activities may be essential, and whether (and how) they can be done sustainably, as part of the quest to secure a livable future. **Prerequisite(s):** PSC 111 or PSC 112 **CC:** SOCS, GSPE **ISP:** LAS

PSC 245 - Populisms in Latin America & Beyond

Course Units: 1.0 Leadership and politics in Latin America are often characterized as populist, but there is widespread disagreement as to what populism is. Claimed by no one, most of the time populism is blamed, disapprovingly, upon leaders and movements connoting demagoguery, manipulative appeals to people's emotions and disregard for formal institutions and rules. Interestingly, a similar characterization of populism has recently entered politics in countries such as France or the U.S. With a main focus on Latin America, extending the discussion outside the region, this course scrutinizes three different "populist moments," from the first half of the 20th century to the present. Major figures such as Peron or Vargas; neoliberal reformers from the 1990s, from Fujimori to Menem, and recent Latin American leaders, from Chávez, to Fernandez de Kirchner, plus a few salient cases from outside the region (e.g. Trump, Le Pen) will be examined in the class. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** LAS

PSC 342R - Challenges to Democratization in Latin America

Course Units: 1.0 **(Not Offered this Academic Year)** Democracies in Latin America confront a number of challenges, obstacles, and dilemmas that frequently put their continuity at risk. This course explores five thematic clusters. Social indicators on rights and inequality, political identities and citizenship, political and legal institutions, life and economic growth, and public safety, crime, and state violence. A preoccupation with some of the most urgent challenges faced by democracy in the region will also lead us to assess actual and potential alternatives. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS **ISP:** LAS

PSC 358 - Wealth and Power Among Nations

Course Units: 1.0 An examination of the tensions between developed and developing countries in the global political economy. First, the course traces the genealogy of thinkers on the issues of development, such as Smith, Marx, Keynes, modernization theory and development economics, as a way to understand the enduring debates within the field. Second, it examines historical transformations in the international economy, such as in trade, global finance and economic crises, in order to understand how the structures and opportunities for developing countries have transformed over time. Finally, although there is no focus on any single region of the world, the course touches upon the oil boom in the Middle East in the 1970s, the debt crises in Latin America and Africa in the 1980s, the rise of Japan and the East Asia tigers, the fall of the Soviet Union and Eastern bloc countries in the 1990s, the new giants of China and India, new forms of post-Fordist production, and the relationship between production and identity. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** LAS, REE

Term Abroad & Mini-Terms

MLT 286T - Gender and Identity in Contemporary Latin American Cinema

Course Units: 1.0 This course offers an interdisciplinary study of contemporary Latin American cinema focusing on issues of representation, reception and spectatorship, and the construction of (national, cultural, gender, and racial) identity. Besides the films, reviews and substantive readings will contribute to an examination of five main topics: 1) Constructions of Gender; 2) Representations of National Identity; 3) Race and Class; 4) Queer Images; and, 5) Imagining Marginality. All films studied in class will link two or more of these topics. **CC:** HUM, LCC **ISP:** FLM, GSWS, LAS

SOC 323T - Survey of Brazilian Society

Course Units: 1 **CC:** LAS

- TAB 321T Buenos Aires Mini-Term
  Note: With approval of Director, MLT 286T and TAB 321T can count toward the Gender, Sexuality & Women's Studies major or the Environmental Policy major, in place of LACS.

Latin American and Caribbean Studies Minor

Requirements for the Minor:

Six courses including:

LAS 101 - Latin American and Caribbean Studies Intro

Course Units: 1.0 This course is an overview of Latin American and Caribbean politics, culture, history, economics, and environmental issues. Through readings, films, discussions, and guest speakers, students gain a solid background in Latin American history and societies. LAS 101 is required for LACS majors/minors and highly recommended for students majoring in Spanish, interested in international or global politics, or planning to apply for full terms or mini-terms to Latin America and the Caribbean. **CC:** LCC, SOCS **ISP:** AFR, LAS

- Two LACS courses (from any concentration)
- Three courses in French, Portuguese* or Spanish (or any other official language of Latin America) above the introductory level
  *The Portuguese option for the minor in LACS is only available to students participating in the full-length term abroad program to São Paulo, Brazil.

Note: No course can be counted twice.

Latin American and Caribbean Studies, B.A.

Requirements for the Major:

Twelve courses with LACS credit, including:

LAS 101 - Latin American and Caribbean Studies Intro

Course Units: 1.0 This course is an overview of Latin American and Caribbean politics, culture, history, economics, and environmental issues. Through readings, films, discussions, and guest speakers, students gain a solid background in Latin American history and societies. LAS 101 is required for LACS majors/minors and highly recommended for students majoring in Spanish, interested in international or global politics, or planning to apply for full terms or mini-terms to Latin America and the Caribbean. **CC:** LCC, SOCS **ISP:** AFR, LAS

- One 300-level language course in Spanish or French (or subject to the approval fo the LACS Director, an equivalent-level language course in Portuguese or any other official language of Latin America, or the successful completion of Portuguese during a full term abroad.
- Three courses from a concentration
- Two courses from other areas
- Two-term senior thesis
  Note: No course from languages and humanities/social science can be counted twice to meet these requirements.
  Note: LACS Majors can choose between the following concentrations: 1. Humanities and Arts; 2. Social Sciences; 3. Student Designed Concentration (e.g., Biology, Environmental Studies, Geosciences, to be designed in consultation with the LACS Director and the student's academic adviser). Students must take at least three courses for their chosen concentration, and at least two courses from the others. Students must participate in a full-length Term Abroad program in Latin America. Union College offers faculty-run study abroad options, and there are also Independent Study and non-Union programs. Consult with the LACS director for possibilities.

Requirements for Honors in Latin American and Caribbean Studies:

To be eligible for honors, a student must (1) attain a minimum index of 3.50 in courses counted toward the major; (2) a cumulative index of 3.30 or better; (3) a grade of "A minus" or higher on the Senior Thesis (a two-term Senior Project Thesis for LACS Majors); and (4) oral exam based on the Senior Thesis before LACS faculty or a presentation of the work at Steinmetz or another public academic venue.

Five-Year Cooperative Degree Program with Georgetown:

Union has entered into an agreement with Georgetown University that enables qualified undergraduate students majoring in Latin American & Caribbean Studies to receive a master's degree from Georgetown's Latin American Studies program in one academic year and a summer, rather than in the normal three or four semesters. Students interested in this option should contact the Director of LACS for more information.

Course Selection Guidelines:

Students seeking to double major in LACS and another subject that also requires a two-term thesis must present a proposal and obtain written permission from LACS director and the other department chair.

Law and Humanities

Director: Professor T. Gazzarri (Classics)

Law and Humanities Minor

The Law and Humanities minor is designed for students considering law school. Satisfying the requirements for the minor would ensure that students have a deep understanding of the foundations of legal systems in general. Moreover, the minor provides students with the unusual opportunity to learn about law from multi-disciplinary and cross-cultural perspectives which highlight the rich and varied ways in which the law interacts with the liberal arts and humanistic disciplines. Many of the courses that count for the minor are courses that highlight the connections between law and other disciplines, such as classics, philosophy, political science, and religious studies.

Requirements for the Minor:

Six of the following courses, at least three of which are in the Humanities.

Anthropology

ANT 221 - Law, Culture, and Society

Course Units: 1.0 Law is everywhere but it is not everywhere the same. How do diverse social, cultural and historical contexts shape the workings of law? This course introduces students to a series of critical perspectives about what law is and how it contours the fabric of everyday life. Students will learn how key legal issues such as dispute management, decision-making, and reconciliation are actualized in different settings. The ultimate goal of the class is to equip students with the tools to critically evaluate legal processes in multicultural and plural societies. The course begins with a consideration of customary practices and conflict resolution in non-Western societies and then looks at how anthropology helps us to understand law in contemporary societies. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** LAW

ANT 227 - Policing the Americas: Law and Order in the Western Hemisphere

Course Units: 1.0 The Western Hemisphere is a violent place: drug wars in Mexico, street gangs in Central America, mass killings in the United States, and everywhere soaring rates of violent crime. What kinds of responses are emerging to problems of law, order, and public security in the Americas? How are these responses reshaping our societies? To what extent is the current situation the legacy of failed security policies? What is the role of the police and policing in all of this? This class adopts an anthropological perspective on the practice of policing. It looks at policing as the production of law and order-not just by local cops on the beat but also by actors involved in national and international security. The focus is on the Western Hemisphere and the influence of the United States on the ideals, institutions, and practices of policing. Key topics include: immigration, incarceration, deportation, frontiers, the movement of licit and illicit goods, democratic rights, and the regional impact of U.S. security initiatives including the Cold War, the War on Drugs, and the War on Terrorism. These topics will be grounded in studies of policing and police reform in the United States, Brazil, Colombia, Guatemala, and Mexico. By the end of the semester, students will have a working knowledge of critical issues in contemporary policing as well as the legal, socio-cultural, and economic factors behind the emerging models of police in the Americas. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AMS, LAS, LAW

ANT 246 - Anthropology of Human Rights

Course Units: 1.0 In recent years, anthropological discussions of human rights have gone beyond the traditional debate between universalism and relativism sparked by the 1948 Universal Declaration of Human Rights. Marginalized peoples who are the traditional subjects of anthropological research are increasingly using human rights rhetoric to advance their own causes or draw attention to their plight. This course will examine philosophical and anthropological discussions of human rights and contemporary debates and controversies surrounding human rights. In particular, we will examine the deployment of truth commissions in the aftermath of political violence, the role of human rights NGOs, contested claims of suffering, and human rights interventions. **CC:** SOCS, LCC, GCHF, GSPE **ISP:** LAW, REE

Classics

CLS 187 - Capital Punishment in the Ancient World

Course Units: 1 This course provides a detailed overview of capital punishments in ancient Greece and Rome. Each type of punishment will be analyzed from different angles: social, historical, literary and philosophical. The analysis of the various issues will be sustained by gradual reading of the texts required for the course, and by the analysis of significant evidence concerning the topic. Particular emphasis will be given to the thorough study of the primary sources, both literary and archaeological. Regular discussions of the assigned readings will take place every single session and the various contents of the readings will be included both in Quizzes and exams. Two quizzes, a Midterm and a Final exam will assess the student's progress. **ISP:** LAW

CLS 186 - Roman Law and Society

Course Units: 1.0 A survey of Roman law with special attention to constitutional history in the context of the conceptual development of civil law. Basic concepts of Rome's civil law include "person" (who qualified and under what conditions?), "property" (at the end of the day, what else was there?), "succession" (i.e., who inherited property when the owner died?), "contract" (the fine print has been important for a long time!), and "delict" (wrong-doing, damages, and remedies or, failing that, punishments). We will look, in other words, at the Roman constitution and its intersections with basic civil rights and the procedures for conducting one's affairs legally. Crimes and their punishments will hold our interest too, as will the influence of Roman legal thinking on European and American jurisprudence. **CC:** LCC, HUM **ISP:** LAW

Economics

ECO 123 - Values, Norms, and Economic Justice

Course Units: 1.0 This class considers the goals economic policy might pursue and how different theories of the good lead to particular choices about desirable or undesirable economic policies. We consider mainstream economic thinking, which has roots in utilitarianism and liberalism, and alternative ideas such as libertarianism, Austrian economics, feminist, communitarian, and religious philosophy and economics. We apply these ideas to relevant policy issues, such as free trade, globalization, unemployment, income distribution, affirmative action, care of the environment, health care, and famine relief. **Cross-Listed:** PHL 123 **CC:** HUM, SOCS, JSPE **ISP:** LAW

English

EGL 271 - Dark Deeds: Crime in the Adirondacks

Course Units: 1.0 Merriam Webster defines a crime as an illegal act for which someone can be punished by the government; especially: a gross violation of law. A crime, however, is also defined in moral and ethical terms, as a grave offense, especially against morality; something reprehensible, foolish, or disgraceful. Students in this course will

explore a variety of literary and historical illustrations of each of these types of crimes as they have occurred in the Adirondack Mountains throughout history. As we investigate various illegal acts in the Adirondacks, we will also examine underlying moral crimes, such as poverty and economic depression, which have the potential to lead individuals toward a life of crime. We will explore Chester Gillette's 1906 murder of Grace Brown at Big Moose Lake and the highly sensationalized murder trial that ensued, alongside Theodore Dreiser's 1925 novel that was based on the murder and criminal case. We will analyze the prison system in the Adirondacks, and we'll investigate various mobsters who stayed in Saratoga Springs during the Prohibition Era. We will also explore the crime of contagion as we read works written about tuberculosis and various sanatoriums in Saranac Lake. Part of our class time will be held at the Kelly Adirondack Center (KAC), working in the Adirondack Research Library. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, ENS, LAW

Philosophy

PHL 105 - Introduction to Ethics

Course Units: 1.0 An introduction to traditional normative ethical theories, which attempt to provide a rationally defensible account of morally right and wrong conduct and morally good and bad character, and consideration of the challenges posed to these theories by ethical relativism and feminist ethics. **CC:** HUM **ISP:** LAW

PHL 110 - Moral Problems

Course Units: 1.0 An introduction to ethics by considering how a wide variety of reality-based examples of complex and controversial ethical issues might be resolved in a rational manner. **CC:** HUM **ISP:** LAW

PHL 205 - Relativism

Course Units: 1.0 Relativism is not just a 'theoretical' issue: the Events of 9/11 have pitted those who demand 'moral clarity' against those who urge 'more understanding'. Moral disagreement is not limited to conflicts between cultures: democratic societies attempt to accommodate points of view which conflict and diverge, sometimes nearly to the point of violence, as debates on abortion or gay marriage or the separation of church and state, or even taxation, show. But relativism is also an important theoretical issue as it raises questions about truth, justification of belief and moral skepticism. We explore these theoretical, moral and political dimensions through reading of theorists such as Rawls, Nagel, Harman, Thomson, Gutmann, and others. One philosophy course prerequisite or permission of the instructor **CC:** HUM **ISP:** LAW

PHL 231 - Symbolic Logic

Course Units: 1.0 An introduction to modern symbolic logic, focusing on translation, semantics and syntax for propositional and predicate logic. You will learn to translate natural language into the language of logic and vice versa, and study key concepts such as validity, consistency, proof, soundness and completeness. **CC:** HUM, QMR **ISP:** LAW

PHL 237 - Introduction to Political Philosophy

Course Units: 1.0 An historical introduction to issues in political philosophy. The texts that we will consider address questions such as: Why should individuals live in society at all? Why should individuals obey any government at all? What are the sources, limits and purposes of political power? **CC:** HUM **ISP:** LAW

PHL 250 - Ethical Theory

Course Units: 1.0 Theories such as utilitarianism, pure obligation theory, virtue-ethics, and enlightened self-interest theory propose to provide defensible methods for answering questions about right and wrong. The course examines traditional theories (Aristotle, Hobbes, Kant, Mill, etc.) and contemporary theories (Harman, Rawls, Wolf, Nagel, Gauthier) on issues such as moral skepticism and truth, rational self-interest, care as the basis of ethics, the diversity of moral beliefs, moral trump cards, etc. **CC:** HUM **ISP:** LAW

Political Science

PSC 113 - Introduction to Political Thought

Course Units: 1.0 This course examines key ideas and concepts, as well as "eternal" questions, in the history of western political thought. We will ask controversial questions such as: What is justice? Can we achieve democracy without eliminating poverty? What are the qualities of a good leader? Should we even have leaders? Can women be philosopher-kings? How does class struggle affect the participation of citizens? What are the qualities of a "good" citizen? These questions have been debated for over 2500 years. The debate continues in this course as we learn what the major thinkers said about these issues. **CC:** SOCS **ISP:** LAW

PSC 232 - Violence and Politics

Course Units: 1.0 What is the relationship between violence and politics? Is politics a continuation of violent struggle through other means? Or is there a fundamental difference between the two? What is the relationship between legal order and violence? What is the role of violence in resisting different forms oppression? Can the use of violence ever be morally justifiable? If so, when and why? This political theory course aims to inquire into these challenging questions by studying the theoretical debates on the relationship between violence and politics with a special emphasis on questions related to the relationship between legal order, constitution of the state, and the use of violence both in support of, and in opposition to, the existing order. During the course of the term, we will focus on debates surrounding difference forms of violence in embedded in our legal systems, look at examples of resistance movements, assess different arguments made in defense of nonviolent and violent methods of resistance, analyze different conceptions of civil disobedience, and grapple with the question of how representations of violence affect our judgments about its legitimacy and/or justification. **CC:** SOCS **ISP:** LAW

PSC 273 - The Supreme Court and Judicial Politics

Course Units: 1.0 An investigation of the judicial branch of government in the U.S. that focuses on the role of judges, the functioning of courts, and leading contemporary controversies in the judicial system. Among the primary concerns of this course are: the structure of the American Judiciary, judicial selection processes, how cases originate and move through the judicial system, how judges think about and reach decisions in the cases, and the role law plays in society. In exploring these topics many actual Supreme Court cases are dissected, focusing on such issues as: gay rights, pornography, rights of disabled citizens, the rights of those accused of crimes, and free speech over the Internet, to name only a few areas. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, LAW

PSC 364 - Law and Film

Course Units: 1.0 This course uses the medium of film as a springboard to introduce and explore concepts in legal theory, American legal culture, and the exercise of public and private power through the legal system. Specific topics of discussion include law as morality, higher versus positive law, law and gender, and the heroic lawyer mythology. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, WAC **ISP:** AMS, FLM, LAW

PSC 370 - Constitutional Law

Course Units: 1.0 An examination of the Constitutional tradition in the United States, focusing upon the structure and powers of the federal government. Topics and themes include the power of the courts to interpret the laws and the Constitution, the power of the federal government and the significance of "states' rights," federal government intervention in matters of "commerce" or economics, and the nature and expansion of executive power, especially in the area of national security. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **CC:** SOCS **ISP:** AMS, LAW

PSC 371 - Civil Rights and Civil Liberties

Course Units: 1.0 Considers the protections afforded to individual rights and liberties by the U.S. Constitution and the Bill of Rights. Topics include freedom of speech and assembly, the right to privacy, religious freedom, equal protection and discrimination, and the due process rights of those accused of crimes. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, JCHF, JSPE **ISP:** AMS, LAW

Sociology

SOC 240 - Political Sociology

Course Units: 1.0 Explores issues of political power, domination, and legitimacy from a sociological perspective. Topics include the creation and maintenance of political power and the impact of political socialization. **Cross-Listed:** PSC 284 **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AFR, AMS, ENS, LAW

SOC 261 - Crime and Justice in Society

Course Units: 1.0 The social construction of crime and delinquency as social and legal categories; perspectives on causation and consequences of the societal reaction to crime. **Prerequisite(s):** SOC 100 **ISP:** LAW

- SOC 265 Sociology of Human Rights

Leadership in Medicine/Health Care Management Program

Advisor: J. Fitzgerald
Staff: S. Bruno (Program Assistant)

The Leadership in Medicine/Health Systems Program is offered jointly by Union College, Clarkson University - Capital Region Campus, and Albany Medical College. The goal of the Leadership in Medicine/Health Systems Program is to prepare physicians who will be leaders capable of addressing the managerial, ethical, multicultural, and international challenges facing American medicine in the 21st century. Students complete an enriched curriculum of coursework to attain the B.S., M.S. or M.B.A., and M.D. degrees in eight calendar years, bypassing the requirement of the Medical College Admission Test. Admission into the program leads automatically to entrance into Albany Medical College after four calendar years of study at Union and Clarkson University - Capital Region Campus, provided that the student maintains satisfactory standards of academic achievement as defined below and that the Union College-Clarkson University-Albany Medical College Policy and Promotions Committee determines that the student has demonstrated sufficient personal and professional development for the profession of medicine.

The curriculum at Union stresses thorough preparation in the sciences, humanities, and social sciences. When combined with coursework in health care management at Clarkson University, students are provided with a breadth of knowledge and understanding not typically found in premedical programs. Each year, about 15 highly-qualified secondary school seniors are enrolled in the program.

Leadership in Medicine/Healthcare Management, B.S.

Program Requirements:

Over four full 3-term academic years and one summer (two for students who opt for the M.B.A.), students take 31-32 courses that count towards a B.S. degree at Union College (roughly half in the sciences and half in the social sciences and humanities) and another 10 graduate courses at Clarkson University - Capital Region Campus to earn an M.S. degree in Healthcare Management or 14 graduate courses to earn the M.B.A. degree in Healthcare Management (Note: 10 of the courses count toward either graduate degree.)

Important curricular requirements include:

- An interdepartmental major, one part of which is in the natural sciences (Biology, Chemistry, Biochemistry, Math, Physics) and the other part of which is in the social sciences (including Psychology) or humanities;
- An international experience
- The program in healthcare management through the School of Business at Clarkson University (either the M.S. or the M.B.A.).
- Independent Study, Independent Research, Special Projects (usually numbered 400+) cannot be substituted for LIM Math/Science coursework. However, students may complete a thesis in their non-Math/Science ID major.

All students enrolled in the program will take a minimum of 16 Union College Math/Science courses. Without AP credits, students usually take the following:

BIO 103 - Diversity of Life: Heredity, Evolution, and Ecology

Course Units: 1.0 More than 3.5 billion years of evolution have resulted in the astonishing diversity of life on earth. This course will explore biodiversity through the lens of ecology, evolution, and heredity, and will investigate various topics, including: the history of life on Earth, evolutionary change, Mendelian & non-Mendelian inheritance, as well as human impacts on biodiversity and ecological functioning. These processes will be studied in the lab using animal model systems, computer simulations, observations of diversity, and molecular techniques. Students will learn experimental design, data analysis, scientific writing, and various laboratory skills during weekly lab sessions. **Corequisite(s):** BIO 103L **CC:** SCLB, GNPS **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 104. **ISP:** ENS

BIO 104 - Cellular Foundations of Life

Course Units: 1.0 The cell is the basic unit of life. From single-celled to multicellular organisms, the cell must transform energy to survive, interact with its environment and reproduce itself. Different types of cells have different functions, and those specialized functions are exhibited in the signals they send and receive, the genes they express and ultimately the biochemical reactions they regulate. Thus, the arrangement and actions of biologically important molecules organize into functioning cellular systems and work together to carry out these important life processes. Required weekly laboratory sessions will introduce students to important tools and methods used by biologists and employ them to investigate biochemical and cellular processes and develop skills with scientific investigation including distinguishing theories and hypotheses, generating and testing hypotheses and analyzing data. **Corequisite(s):** BIO 104L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 103.

BIO 205 - Topics in Molecular Biology

Course Units: 1.0 In this sophomore level course, students will learn the key concepts of the molecular biology of the cell as well as how to integrate the principles of cell structure and function with the underlying molecular mechanism(s). Discussions will focus on gene structure, mechanisms of replication, transcription and translation, mutation and DNA repair, gene regulations, and genomics. Each of these concepts will be discussed in the context of a unifying theme selected by the instructor. Possible examples of these themes include viruses, epigenetics, human diseases, biotechnology and artificial organisms, cell fate determination and differentiation. **Prerequisite(s):** BIO 103 and BIO 104 . **CC:** SET **Note:** May not be taken simultaneously with BIO 206.

BIO 206 - Topics in Physiology

Course Units: 1.0 Cells are organized into tissues, organs, and organ systems, which carry out functions of energy storage and transformation, transport, signaling, and the regulation of internal conditions. These functions arise from activities and interactions that span different levels of the organizational hierarchy. This sophomore level course will focus on how physiological processes arise and are controlled and why these mechanisms have evolved. This course will also demonstrate how physiology can help bridge understandings between molecular/cellular biology and ecology/evolutionary biology. **Prerequisite(s):** BIO 103 and BIO 104 . **CC:** SET **Note:** May not be taken simultaneously with BIO 205.

BIO 210 - Neuroscience: Mind & Behavior

Course Units: 1.0 Basic concepts of brain functioning as they relate to psychological phenomena. Including methodology, neuroanatomy, and neurotransmission, important for understanding the mediation of behavior. **Cross-Listed:** PSY 210 **Prerequisite(s):** PSY 100 or BIO 103 and BIO 104 . **CC:** SET

CHM 101 - Introductory Chemistry 1

Course Units: 1.0 This is an introductory course that focuses on atomic and molecular structure, chemical bonding, stoichiometry, aqueous chemical reactions, and the properties of gases, liquids, solids and solutions. **Prerequisite(s):** Not open to students who have scored 4 or 5 on the AP Chemistry Exam or who have completed CHM 110H . All students who wish to enroll in an introductory chemistry course must take a placement examination to determine the appropriate course. See Course Selection Guidelines for more information on placement. **Corequisite(s):** CHM 101L **CC:** SCLB **Lecture/Lab Hours** Three lab hours/week,6/10 weeks. **ISP:** ENS

CHM 102 - Introductory Chemistry 2

Course Units: 1.0 A continuation of CHM 101 , focusing on thermodynamics, chemical kinetics, chemical equilibrium, acids and bases, electrochemistry, and an introduction to organic chemistry. **Prerequisite(s):** CHM 101 or placement via the placement exam. **Corequisite(s):** CHM 102L **Prereq/Corequisite(s):** Not open to students who have taken CHM 110H . **CC:** SCLB, GNPS **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

CHM 231 - Organic Chemistry 1

Course Units: 1.0 A mechanistic approach to the chemistry of carbon compounds organized around the reactions of functional groups. We cover alkanes, cycloalkanes, alcohols, alkyl halides (nucleophilic substitution and elimination), alkenes (addition and elimination), alkynes, spectroscopy (IR and NMR) and computer molecular modeling. **Prerequisite(s):** CHM 102 or CHM 110H **Corequisite(s):** CHM 231L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

CHM 232 - Organic Chemistry 2

Course Units: 1.0 A continuation of CHM 231 including an emphasis on synthesis, and the chemistry of conjugated and aromatic compounds, carbonyl compounds, and an introduction to important classes of biomolecules. **Prerequisite(s):** CHM 231 **Corequisite(s):** CHM 232L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week.

MTH 110 - Calculus 1: Differential Calculus

Course Units: 1.0 Differential calculus of functions of a single variable. Limits, continuity, differentiation, computational aspects of Maclaurin and Taylor polynomials and series, and applications. **Note:** Not intended for students who have passed MTH 059 ,MTH 105 , MTH 113 , MTH 110P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

PHY 110 - Physics for the Life Sciences 1

Course Units: 1.0 An introduction to classical mechanics, fluids, and thermodynamics with applications in the life sciences. Students must major in a life science or be admitted by permission of the instructor. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **Corequisite(s):** PHY 110L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

PHY 111 - Physics for the Life Sciences 2

Course Units: 1.0 An introduction to electromagnetism, optics, and the structure of matter with applications in the life sciences. **Prerequisite(s):** PHY 110 , PHY 120 ,MTH 102 , MTH 112 ,or MTH 113 **Corequisite(s):** PHY 111L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

and one of the following upper level biology courses

BIO 330 - Comparative Animal Physiology w/lab

Course Units: 1.0 A study of internal physiological systems (e.g., respiration, circulation, and muscle systems). Physiological function in a wide variety of animal groups with a strong emphasis on the interaction of organisms with their environment. **Prerequisite(s):** BIO 205 and BIO 206 **Corequisite(s):** BIO 330L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 332 - Comparative Vertebrate Anatomy w/lab

Course Units: 1.0 Comparative analysis of vertebrate structure with emphasis on evolution and function. Laboratories examine vertebrate anatomy through dissections of four groups: mammals, fish, amphibians, and birds. **Prerequisite(s):** BIO 103 , BIO 104 and BIO 206 **Corequisite(s):** BIO 332L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 352 - Microbiology w/lab

Course Units: 1.0 An overview of microbiology with emphasis on bacteria and viruses. Lectures will focus on the structural and functional characteristics of prokaryotes, the diversity, growth, and control of bacteria, and the structure and infectious cycle of DNA and RNA viruses, with special attention to those organisms that cause disease in humans. Particularly recommended for students planning careers in medicine and other health-related professions. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 352L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **Note:** Requires 2-3 hours of independent lab work per week.

BIO 354 - Developmental Biology w/lab

Course Units: 1.0 The study of the developing embryo is the science of the emergence of living order. With an emphasis on experimental design, we examine cell communication, cell fate, tissue patterning and morphogenesis, and gene expression and regulation explored within the context of experimental organisms. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 354L **CC:** SCLB, WAC, WAC-R **Lecture/Lab Hours** One lab per week.

BIO 355 - Immunology w/lab

Course Units: 1.0 The cellular and molecular basis of immunological specificity, regulatory and effector mechanisms of the mammalian immune response, and the importance of the innate immune system in the initiation and development of adaptive immunity. Laboratory exercises include basic techniques and concepts emphasizing morphological identification of leukocytes, anatomy of mouse lymphoid organs, phagocytosis and bactericidal components of innate immunity, agglutination, enzyme-linked immunosorbent assay (ELISA), analytical flow cytometry, and western blotting. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 355L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 362 - Experimental Neurobiology w/lab

Course Units: 1.0 This course provides an overview of biological function of animal nervous systems, with an emphasis on specific experimental methods and primary literature underlying this knowledge. Topics include ionic basis of actions potentials, electrophysiology, sensory and motor systems, brain-machine interfaces and the neural basis of animal behavior and navigation. Inquiry-based laboratory exercises include basic techniques in electrophysiology recording and stimulation, fine dissection, fluorescent labeling of neural cells, as well as data analysis, presentation and communication (writing intensive). **Cross-Listed:** PSY 312 **Prerequisite(s):** BIO 205 and either BIO 206 or BIO 242 . **Corequisite(s):** BIO 362L **CC:** SET **Lecture/Lab Hours** One lab per week.

BIO 368 - Advanced Molecular Biology w/lab

Course Units: 1.0 Many of the advances made in medicine and molecular biology have been based on work done in microbial systems. This integrated laboratory course will focus on the discovery and characterization of antibiotic-producing soil microbes, using microbiological and molecular techniques. As part of the Tiny Earth collaboration, students will contribute their findings to a database shared by a network of student researchers from over 700 other institutions around the globe. In addition, we will explore gene expression and gene regulation of antibiotic production and resistance, and how bacterial systems have become advanced tools for the study of these processes. Combined lecture and lab course meets twice/week for 3 hours; Requires 2-3 hours of independent lab work per week. **Prerequisite(s):** BIO 205 and CHM 231 or permission of the instructor. **CC:** SCLB

BIO 378 - Cancer Cell Biology

Course Units: 1.0 This course investigates the molecular basis of cancer by comparing normal cells to cancer cells with respect to growth control mechanisms, signal transduction, and cell-cell and cell-environment interactions. A large percent of the content of the course comes from recent research papers which students read and present to the class. Laboratory exercises include primary tissue culture, immunofluorescence microscopy, immunodetection, and a final

research project. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 378L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 384 - Genetics and Molecular Biology w/lab

Course Units: 1.0 The use of both classical genetics and molecular biology as experimental tools is currently being applied to an extremely diverse array of questions in biology. This course will expose the student to many of the commonly-used techniques in the "toolkit" of the geneticist/molecular biologist. Emphasis will be on recent advances in our understanding of topics of current interest such as development, cellular response to environmental stimuli, tumor formation, human genetic disease, circadian rhythms, and mammalian sex determination, amongst others. Laboratory will emphasize the use of modern molecular biological techniques and will involve group projects of the students' choice. **Prerequisite(s):** BIO 205 and CHM 102 or CHM 110H **Corequisite(s):** BIO 384L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

plus 3 or more additional courses designated by their science ID major:

Chemistry ID:

CHM 240 - Analytical Chemistry

Course Units: 1.0 A course that focuses on the quantitative analysis of samples. Classroom and laboratory emphasis on statistical treatment of data, classical and instrumental methods of chemical analysis, and chemical equilibrium. **Prerequisite(s):** CHM 231 **Corequisite(s):** CHM 240L **CC:** SCLB, WAC-R **Lecture/Lab Hours** Six lab hours each week. **ISP:** ENS

CHM 382 - Biochemistry: Structure and Catalysis

Course Units: 1.0 Structure and function of proteins/enzymes including purification, mechanism, kinetics, regulation, metabolism and a detailed analysis of several classic protein systems. **Cross-Listed:** BCH 382 and BIO 382 **Prerequisite(s):** CHM 232 Not open to students who have completed CHM 335 , BIO 335 or BCH 335 **Corequisite(s):** CHM 382L **CC:** SCLB, WAC, WAC-R **Lecture/Lab Hours** Four lab hours each week.

plus

- CHM elective ≥200 level with lab or any ≥300 level

Biology ID:

BCH 335 - Survey of Biochemistry

Course Units: 1.0 A survey of topics in biochemistry including the structure, conformation, and properties of the major classes of biomolecules (proteins, nucleic acids, lipids, and carbohydrates); enzyme mechanisms, kinetics, and regulation; metabolic transformations; and bioenergetics and metabolic control. Emphasis will be on the fundamentals of biochemistry and our current understanding in the field. **Cross-Listed:** BIO 335 and CHM 335 **Prerequisite(s):** BIO 205 and CHM 231 **Prereq/Corequisite(s):** Not open to students who have completed either BCH 380 or BCH 382 .

or

CHM 382 - Biochemistry: Structure and Catalysis

Course Units: 1.0 Structure and function of proteins/enzymes including purification, mechanism, kinetics, regulation, metabolism and a detailed analysis of several classic protein systems. **Cross-Listed:** BCH 382 and BIO

382 **Prerequisite(s):** CHM 232 Not open to students who have completed CHM 335 , BIO 335 or BCH 335 **Corequisite(s):** CHM 382L **CC:** SCLB, WAC, WAC-R **Lecture/Lab Hours** Four lab hours each week.

or

BIO 380 - Biochemistry: Nucleic Acids, Carbohydrates, and Lipids w/lab

Course Units: 1.0 An in-depth investigation into some of the macromolecules that are essential to life's processes. The course focuses on non-protein molecules and their unique chemical properties. **Cross-Listed:** BCH 380 **Prerequisite(s):** BIO 205 and CHM 232 , or permission of the instructor. CHM 232 , or permission of the instructor. **Corequisite(s):** BIO 380L **Prereq/Corequisite(s):** Not open to students who have completed BIO 335 . **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week.

plus

- Elective 1: BIO 300-level or higher w/lab
- Elective 2: BIO 300-level or higher w/lab or BIO 328, BIO 364, BIO 370

Math ID:

see Math ID requirements in consultation with math advisor. Must include one of the following:

BCH 335 - Survey of Biochemistry

Course Units: 1.0 A survey of topics in biochemistry including the structure, conformation, and properties of the major classes of biomolecules (proteins, nucleic acids, lipids, and carbohydrates); enzyme mechanisms, kinetics, and regulation; metabolic transformations; and bioenergetics and metabolic control. Emphasis will be on the fundamentals of biochemistry and our current understanding in the field. **Cross-Listed:** BIO 335 and CHM 335 **Prerequisite(s):** BIO 205 and CHM 231 **Prereq/Corequisite(s):** Not open to students who have completed either BCH 380 or BCH 382 .

or

CHM 382 - Biochemistry: Structure and Catalysis

Course Units: 1.0 Structure and function of proteins/enzymes including purification, mechanism, kinetics, regulation, metabolism and a detailed analysis of several classic protein systems. **Cross-Listed:** BCH 382 and BIO 382 **Prerequisite(s):** CHM 232 Not open to students who have completed CHM 335 , BIO 335 or BCH 335 **Corequisite(s):** CHM 382L **CC:** SCLB, WAC, WAC-R **Lecture/Lab Hours** Four lab hours each week.

or

BIO 380 - Biochemistry: Nucleic Acids, Carbohydrates, and Lipids w/lab

Course Units: 1.0 An in-depth investigation into some of the macromolecules that are essential to life's processes. The course focuses on non-protein molecules and their unique chemical properties. **Cross-Listed:** BCH 380 **Prerequisite(s):** BIO 205 and CHM 232 , or permission of the instructor. CHM 232 , or permission of the instructor. **Corequisite(s):** BIO 380L **Prereq/Corequisite(s):** Not open to students who have completed BIO 335 . **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week.

plus

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

MTH 199 - Introduction to Logic and Set Theory

Course Units: 1.0 Designed to enable the student to develop the ability to understand and communicate mathematical arguments. Logic and set theory from the core. Selected topics are covered at the discretion of the instructor. For those considering any form of mathematics major, the department recommends that Math 199 be taken by fall term of the sophomore year, if possible. **Note:** Credit is not normally given for both MTH 197 and MTH 199. MTH 115 is usually taken before MTH 199. **Prerequisite(s):** One of MTH 112, MTH 113 ,MTH 115 , MTH 115H, MTH 117 , IMP 120 or permission of the department chair. **CC:** WAC, WAC-R

3 MTH ≥ 200+ electives

1 MTH ≥ 300 elective

Physics ID:

see Physics ID requirements in consultation with physics advisor. Must include one of the following:

BCH 335 - Survey of Biochemistry

Course Units: 1.0 A survey of topics in biochemistry including the structure, conformation, and properties of the major classes of biomolecules (proteins, nucleic acids, lipids, and carbohydrates); enzyme mechanisms, kinetics, and regulation; metabolic transformations; and bioenergetics and metabolic control. Emphasis will be on the fundamentals of biochemistry and our current understanding in the field. **Cross-Listed:** BIO 335 and CHM 335 **Prerequisite(s):** BIO 205 and CHM 231 **Prereq/Corequisite(s):** Not open to students who have completed either BCH 380 or BCH 382 .

or

CHM 382 - Biochemistry: Structure and Catalysis

Course Units: 1.0 Structure and function of proteins/enzymes including purification, mechanism, kinetics, regulation, metabolism and a detailed analysis of several classic protein systems. **Cross-Listed:** BCH 382 and BIO 382 **Prerequisite(s):** CHM 232 Not open to students who have completed CHM 335 , BIO 335 or BCH 335 **Corequisite(s):** CHM 382L **CC:** SCLB, WAC, WAC-R **Lecture/Lab Hours** Four lab hours each week.

or

BIO 380 - Biochemistry: Nucleic Acids, Carbohydrates, and Lipids w/lab

Course Units: 1.0 An in-depth investigation into some of the macromolecules that are essential to life's processes. The course focuses on non-protein molecules and their unique chemical properties. **Cross-Listed:** BCH 380 **Prerequisite(s):** BIO 205 and CHM 232 , or permission of the instructor. CHM 232 , or permission of the instructor. **Corequisite(s):** BIO 380L **Prereq/Corequisite(s):** Not open to students who have completed BIO 335 . **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week.

plus

PHY 122 - Relativity, Quantum, and Their Applications

Course Units: 1.0 Calculus-based introduction to the structure of matter, including quantum effects, particle, nuclear, atomic, molecular, and solid state physics, and applications to materials of interest to engineers and scientists. **Prerequisite(s):** PHY 121 IMP 113 or IMP 121 . **Corequisite(s):** PHY-122L **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

PHY 123 - Heat and Light

Course Units: 1.0 Calculus-based introduction to thermodynamics, geometric and physical optics, and astrophysics. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 121 or IMP 121 . **CC:** ENS

PHY 200 - Molecular Biophysics

Course Units: 1.0 Selected topics in molecular biophysics including an overview of proteins, nucleic acids, viruses and bacteria, with an emphasis on molecular structure and functioning. Experimental techniques used in modern biophysical research included in the course are various optical spectroscopies and microscopies, as well as hydrodynamic methods (sedimentation, diffusion, viscosity, electrophoresis), NMR, and x-ray diffraction. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 , and some exposure to biology or permission of the instructor.

PHY 210 - The Physics of Modern Medicine: Applications in Imaging, Surgery and Therapy

Course Units: 1.0 This course introduces the technologies used in modern medicine and the basic physical principles that underlie them. Topics will include: laser surgery, ultrasound imaging, laparoscopic surgery, diagnostic x-ray imaging, nuclear medicine, computed tomography (CAT) scans, magnetic resonance imaging (MRI) scans, and radiation therapy. Safety issues involved in the use of each technique will be considered in depth, and discussions will include societal implications of the growing use of technology in medicine. Specific medical applications discussed will include (but are not limited to): colon cancer screening, arthroscopic knee surgery, laser eye surgery, dermatological laser surgery, obstetrical ultrasound, cardiovascular ultrasound, mammography, osteoporosis screening, cancer radiation therapy, and applications of PET and MRI brain scans in neuroscience. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 , or permission of the instructor. **CC:** WAC

one PHY elective:

PHY 220 - Relativity and Introduction to Quantum Mechanics

Course Units: 1.0 A second course in modern physics covering special relativity and an introduction to quantum mechanics. Topics include relativistic kinematics, relativistic dynamics, four-vector notation, relativistic collisions, origins of quantum mechanics, Schrodinger's equation and the development of wave mechanics, applications of wave mechanics in one and three dimensions (step potential, square well, harmonic oscillator), angular momentum operators, the hydrogen atom, Dirac notation and matrix formulation of linear operators, Dirac Delta function, spin angular momentum, measurement theory, and time-independent perturbation theory. **Prerequisite(s):** PHY 122 **CC:** ENS **Lecture/Lab Hours** One hour computational lab each week.

PHY 230 - Intermediate Classical Mechanics

Course Units: 1.0 An analytical treatment of classical mechanics. Topics include motion of a particle in one, two, and three dimensions; planetary motion; collision theory; moving coordinate systems; dynamics of rigid bodies; and the Lagrangian form of the equations of motion. **Prerequisite(s):** PHY 110 or PHY 120 or IMP 120 **Prereq/Corequisite(s):** MTH 117 (pre- or co-requisite), or permission of the instructor. **Lecture/Lab Hours** One hour computational lab each week.

PHY 270 - Intermediate Electromagnetism

Course Units: 1.0 Electric and magnetic fields and potentials; electric and magnetic properties of matter; Maxwell's field equations. **Prerequisite(s):** PHY 121 and MTH 117 or IMP 121 , or permission of the instructor. **Lecture/Lab Hours** One hour computational lab each week.

PHY 310 - Advanced Topics in Physics 1

Course Units: 1.0 Course topic for each year to be chosen from the following: Computational Physics: A laboratory-based course providing practical tools to solve computational physics problems drawn from a wide range of areas, including classical mechanics, electromagnetism, special relativity, and quantum mechanics. Algorithms include root-finders, integration techniques, Monte Carlo methods, ordinary and partial differential equation solvers, numerical Fourier transforms, minimization tools, and numerical linear algebra algorithms. Condensed Matter Physics: An introduction to the microscopic structures and to the electrical and thermal properties of metals, insulators, and semiconductors. Topics include the description of crystal lattices, electrons in a periodic potential, electronic band theory, phonons and their interactions with electrons, cohesive energy of solids, defect states, and superconductivity. Modern Physical Optics: Interference, diffraction and polarization of light, interaction of light and matter, classical and quantum description of optics, and lasers. Three-hour lab each week. Nuclear/Elementary Particle Physics: An introduction to both nuclear and particle physics covering basic nuclear structure and properties, nuclear models, nuclear decay and radioactivity, nuclear reactions, fission, fusion, accelerators, elementary particle physics, and the quark model. Statistical Mechanics: Probability theory, laws of thermodynamics, kinetic theory of gases and the statistical basis of thermodynamics, Bose Einstein and Fermi Dirac distributions, applications to simple fluids, magnetic systems, metals, photons, and superfluid helium. Advanced Electromagnetism: Relativistic electrodynamics, electromagnetic radiation and waves. Quantum Optics: The study of the interaction of light and matter in systems where the wave nature of matter and the particle nature of light must be taken into account. Topics may include single-photon interference, correlated photons and the EPR paradox, quantum computing, quantum cryptography and quantum teleportation, atom optics and atom interferometry, laser cooling and Bose-Einstein Condensation, and implications of quantum mechanics for nanomaterials and nanodevices. Electronics: A laboratory course in basic electronics and instrumentation for science majors. Topics include AC and DC circuits, diodes, rectifiers, transistors, operational amplifiers, binary logic, Boolean algebra, digital circuits, analog-digital conversion, transducers, and computer interfacing. Six hours of lab each week. Others depending upon student interest. **Prerequisite(s):** Course open to juniors and seniors only. Enrollment by permission of the instructor. **ISP:** ENS

or

PHY 311 - Advanced Topics in Physics 2

Course Units: 1.0 Course topic for each year to be chosen from those listed in Physics 310 depending upon student interest. Course open to juniors and seniors only. Enrollment by permission of the instructor. **Prerequisite(s):** PHY 122 **CC:** WAC

Biochemistry ID (ID only open to LIM students)

see Biochemistry ID requirements in consultation with Biochemistry advisor. Must include all of the following:

BCH 380 - Biochemistry: Nucleic Acids, Carbohydrates, and Lipids

Course Units: 1.0 An in-depth investigation into some of the macromolecules which are essential to life's processes. The course focuses on non-protein molecules and their unique chemical properties. **Cross-Listed:** BIO 380 **Prerequisite(s):** BIO 205 and CHM 232 or permission of the instructor. **Corequisite(s):** BCH 380L **Prereq/Corequisite(s):** Not open to students who have completed BCH 335 **CC:** WAC **Lecture/Lab Hours** Three lab hours each week.

BCH 382 - Biochemistry: Structure and Catalysis

Course Units: 1.0 Structure and function of proteins/enzymes including purification, mechanism, kinetics, regulation, metabolism, and a detailed analysis of several classic protein systems. **Cross-Listed:** BIO 382 and CHM 382 **Prerequisite(s):** CHM 232 **Corequisite(s):** BCH 382L **Prereq/Corequisite(s):** Not open to students who have completed BCH 335 . **CC:** SCLB, WAC-R **Lecture/Lab Hours** Four lab hours each week.

CHM 240 - Analytical Chemistry

Course Units: 1.0 A course that focuses on the quantitative analysis of samples. Classroom and laboratory emphasis on statistical treatment of data, classical and instrumental methods of chemical analysis, and chemical equilibrium. **Prerequisite(s):** CHM 231 **Corequisite(s):** CHM 240L **CC:** SCLB, WAC-R **Lecture/Lab Hours** Six lab hours each week. **ISP:** ENS

plus

One of the following courses:

CHM 330 - Medicinal Chemistry

Course Units: 1.0 This course focuses on medicinal chemistry and the underlying principles of organic chemistry. Topics to be covered include drug discovery and approval, lead modification, drug-receptor interactions, structure-activity relationships (SAR), drug delivery, pro-drugs and biomimetics. Physicochemical properties and synthetic approaches to drug families will be emphasized. **Prerequisite(s):** CHM 232 **CC:** SET

CHM 332 - Synthetic Methods

Course Units: 1.0 This course focuses on developing the common laboratory techniques used in modern synthetic organic chemistry and the underlying principles of organic chemistry covered. Topics to be covered will be in the form of three synthetic projects. **Prerequisite(s):** CHM 232 **CC:** SCLB **Lecture/Lab Hours** Six lab hours each week plus additional instrumentation time outside of lab.

CHM 340 - Chemical Instrumentation

Course Units: 1.0 Theory and practice of modern methods of analysis with emphasis on spectroscopic, chromatographic, electrochemical, and surface science techniques, as well as electronic measurements. **Prerequisite(s):** CHM 231 , CHM 240 , and one course in physics or permission of the instructor. **Corequisite(s):** CHM 340L **CC:** SCLB **Lecture/Lab Hours** Four lab hours each week. **ISP:** ENS

CHM 351 - Kinetics and Thermodynamics

Course Units: 1.0 Properties of gases; fundamentals of statistical mechanics; fundamentals of thermodynamics including heats of reactions, phase transitions, and chemical equilibria; chemical kinetics. **Prerequisite(s):** CHM 240 , PHY 110 or PHY 120 and MTH 115 or MTH 115H **Corequisite(s):** CHM 351L **CC:** SCLB, WAC **Lecture/Lab Hours** Four lab hours each week.

and

One of the following courses:

BIO 352 - Microbiology w/lab

Course Units: 1.0 An overview of microbiology with emphasis on bacteria and viruses. Lectures will focus on the structural and functional characteristics of prokaryotes, the diversity, growth, and control of bacteria, and the structure

and infectious cycle of DNA and RNA viruses, with special attention to those organisms that cause disease in humans. Particularly recommended for students planning careers in medicine and other health-related professions. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 352L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **Note:** Requires 2-3 hours of independent lab work per week.

BIO 354 - Developmental Biology w/lab

Course Units: 1.0 The study of the developing embryo is the science of the emergence of living order. With an emphasis on experimental design, we examine cell communication, cell fate, tissue patterning and morphogenesis, and gene expression and regulation explored within the context of experimental organisms. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 354L **CC:** SCLB, WAC, WAC-R **Lecture/Lab Hours** One lab per week.

BIO 355 - Immunology w/lab

Course Units: 1.0 The cellular and molecular basis of immunological specificity, regulatory and effector mechanisms of the mammalian immune response, and the importance of the innate immune system in the initiation and development of adaptive immunity. Laboratory exercises include basic techniques and concepts emphasizing morphological identification of leukocytes, anatomy of mouse lymphoid organs, phagocytosis and bactericidal components of innate immunity, agglutination, enzyme-linked immunosorbent assay (ELISA), analytical flow cytometry, and western blotting. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 355L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 368 - Advanced Molecular Biology w/lab

Course Units: 1.0 Many of the advances made in medicine and molecular biology have been based on work done in microbial systems. This integrated laboratory course will focus on the discovery and characterization of antibiotic-producing soil microbes, using microbiological and molecular techniques. As part of the Tiny Earth collaboration, students will contribute their findings to a database shared by a network of student researchers from over 700 other institutions around the globe. In addition, we will explore gene expression and gene regulation of antibiotic production and resistance, and how bacterial systems have become advanced tools for the study of these processes. Combined lecture and lab course meets twice/week for 3 hours; Requires 2-3 hours of independent lab work per week. **Prerequisite(s):** BIO 205 and CHM 231 or permission of the instructor. **CC:** SCLB

BIO 378 - Cancer Cell Biology

Course Units: 1.0 This course investigates the molecular basis of cancer by comparing normal cells to cancer cells with respect to growth control mechanisms, signal transduction, and cell-cell and cell-environment interactions. A large percent of the content of the course comes from recent research papers which students read and present to the class. Laboratory exercises include primary tissue culture, immunofluorescence microscopy, immunodetection, and a final research project. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 378L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 384 - Genetics and Molecular Biology w/lab

Course Units: 1.0 The use of both classical genetics and molecular biology as experimental tools is currently being applied to an extremely diverse array of questions in biology. This course will expose the student to many of the commonly-used techniques in the "toolkit" of the geneticist/molecular biologist. Emphasis will be on recent advances in our understanding of topics of current interest such as development, cellular response to environmental stimuli, tumor formation, human genetic disease, circadian rhythms, and mammalian sex determination, amongst others. Laboratory will emphasize the use of modern molecular biological techniques and will involve group projects of the students' choice. **Prerequisite(s):** BIO 205 and CHM 102 or CHM 110H **Corequisite(s):** BIO 384L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

In addition, students must take 15 Social Science and Humanities courses including:

A WAC-R course beginning with the class of 2025, Statistics*, HC 630, HC 633, three non-science electives, plus 8 additional courses to fulfill an ID major in Social Sciences or Humanities. LIM students are not required to complete the full Common Curriculum (General Education), unless they leave the program. Students must complete a minimum of 15 social science and humanities courses.

*The LIM statistics requirement usually is met with AP statistics credit, in which case students replace the statistics course with a humanities or social science elective. Some social science departments have a designated statistics course that is required for majors. If the second major requires a statistics course, students should take that course. Otherwise, students may choose from the following courses: STA 501, ECO 243, SOC 300, PSC 220, PSY 200 or STA 104.

PLEASE NOTE: STA 104 counts as a social science course, **not as a math course**.

Students take the following courses toward the M.S. and M.B.A. degree in Healthcare Management:

M.S. in Healthcare Management:

- **HC 630** - Introduction to Health Systems **(cross-counts as an undergraduate course)**
- **HC 633** - Health Care Leadership **(cross-counts as an undergraduate course)**
- **HC 620** - Health Economics
- **HC 651** - Health Systems Management

- **AC 604** - Financial and Managerial Accounting for Decision Making
- **HC 650** - Structural Dynamics in Healthcare
- **HC 656** - Group Practice Management
- **HC 605** - Health Operations Management
- **HC 637** - Clinical Leadership Practicum

- **HC 617** - Health Care Finance
- **HC 674** - Legal Aspects of Health Care
- **HC 681** - Strategic Issues for Healthcare Organizations (Capstone)

MBA in Healthcare Management students will take the following additional 4 courses:

- **HC 647** - Statistical Models for Management
- **HC 626** - Health Systems Marketing
- **HC 648** - Health Informatics
- **HC 680** - Health Policy and Managerial Epidemiology

Note: For course descriptions, consult the graduate course catalog of Clarkson University - Capital Region Campus.

Advanced Placement

Students who enter the program with advanced placement credit have greater flexibility of course selection, but AP credits do not reduce the number of required courses or allow a student to take a term off. Students must compete a minimum of 16 math/science and 15 humanities/social science courses. When advanced placement credit is given for a course specifically designated in the curriculum, students can take elective courses. Union will grant advanced placement and course credit in accordance with its normal procedures. Student with scores of 4 or 5 on the AP examinations in biology, chemistry or physics or on either of the AP Calculus exams are encouraged to take more advanced courses at the College. Other AP courses will be considered such as Statistics or a course in the second major.

Additional Requirements

Students must maintain minimum cumulative grade point averages of 3.50 both in overall course work (including graduate courses) and in their mathematics and science courses. Students falling below the required overall and mathematics/science grade point averages may be put on formal probation or asked to leave the program by the Policy and Promotions Committee, which oversees the program and reviews student records regularly. A grade of "D" or "F" in any course will most likely lead to dismissal from the program.

Required course work may not be taken on a pass/fail basis and must normally be taken at the home institution. Students may take a science course pass/fail after all science and math program requirements are completed. Students may take one social science or humanities elective pass/fail, however, it cannot be a course required for the ID major. Grades of "I" (Incomplete) or "W" (withdrawal) will not be acceptable without justification involving illness or extenuating circumstances.

As long as a student is enrolled in the Leadership in Medicine program, the Health Professions Advisory Committee at Union College will not support his or her application to other medical schools. Students may transfer into the regular four-year undergraduate program at any time during the premedical portion of the combined degree programs. Once withdrawn from the eight-year combined degree program, students may request the support of the Health Professions Advisory Committee if they choose to apply to medical school in the traditional manner.

Requirements for Honors:

Leadership in Medicine students are not subject to the restrictions for ID majors and may receive departmental honors in one department if they satisfy the requirements of that major. The thesis does not need to integrate both majors as it must for non-program students.

Managerial Economics

Chair: Professor Younghwan Song (Economics)
Faculty: Professors L. Davis, T. Dvorak, B. Lewis, E. Motahar, S. Schmidt, M.F. Sener, Y. Song; Associate Professor K. Raeburn; Assistant Professor P. Arora, D. Cheng, H. Dang, Z. Rodriguez; Visiting Assistant Professors C. Abraham, M. Arora, D. Garrido

Staff: M. Kenneally (Administrative Assistant)

Managerial Economics, B.A.

The Managerial Economics major focuses on the tools and techniques of financial and quantitative analysis essential to the modern manager. In addition to the standard intermediate economic theory courses, students must complete courses in managerial economics, financial analysis, accounting, computer science, mathematics, and an internship with a local organization.

Requirements for the Major in Managerial Economics:

ECO 101 - Introduction to Economics

Course Units: 1.0 Basic microeconomic model of price determination; impact of market structure on price and output decisions by firms; role of the public sector in an economy; basic macroeconomic model of national income determination; impact of fiscal and monetary policies on employment levels, price stability, and economic growth; international economic relationships. **CC:** SOCS

ECO 241 - Microeconomic Analysis

Course Units: 1.0 **(TBD: Staff)** Theory of consumer choice; principles of production and analysis of cost phenomena; pricing and output decisions in competitive and noncompetitive markets; theory of distribution; general equilibrium analysis; introduction to welfare economics. **Prerequisite(s):** ECO 101 and, MTH 105 , MTH 110 or MTH 113 **Prereq/Corequisite(s):** A minimum grade of C in ECO-241 is required to register for ECO 498 **CC:** SOCS

ECO 242 - Macroeconomic Theory and Policy

Course Units: 1.0 Aggregate demand theory. Foundations of aggregate consumption, investment, money demand and money supply. Aggregate supply theory. Keynesian, monetarist, and rational expectations models. Economic growth theory. Unemployment, inflation and stabilization policy. **Prerequisite(s):** ECO 101 and, MTH 105 , MTH 110 , or MTH 113 **Prereq/Corequisite(s):** A minimum grade of C in ECO-242 is required to register for ECO 498 **CC:** SOCS

ECO 243 - Introduction to Econometrics

Course Units: 1.0 Descriptive statistics, probability, random variables and their distributions, sampling, statistical inference including confidence interval estimation, hypothesis testing, and regression analysis. Introduction to economic research using statistical methods to test theories. **Prerequisite(s):** ECO 101 **Prereq/Corequisite(s):** A minimum grade of C in ECO-243 is required to register for ECO 498 **CC:** SOCS **ISP:** ENS

ECO 334 - Introduction to Financial Analysis

Course Units: 1.0 Fundamental concepts of finance (time value of money, risk, and rates of return); analysis of financial statements; bond and stock valuation; capital budgeting; cost of capital, leverage, and optimal capital structure; long-term debt management; dividend policy; mergers and acquisitions; case study of the performance of an enterprise which seeks to maximize shareholder wealth. **Prerequisite(s):** At least one of ECO 241 , ECO 242 , or ECO 243 **CC:** SOCS

ECO 390 - Economics Internships

Course Units: 1.0 Designed to involve students in the operation of various economic agencies, commissions in New York State government and private firms. Interns apply skills to practical problems in economic analysis and gain exposure to the functioning of the agency or firm. **Prerequisite(s):** ECO 241 , ECO 242 , and ECO 243 **CC:** SOCS **ISP:** ENS

ECO 445 - Managerial Economics

Course Units: 1.0 This course is about applying economic principles and analytical techniques to a variety of business problems, including starting a business, measuring performance, evaluating investment projects, financial modeling, pricing of products, managing suppliers, marketing, and strategy. The material is taught using case studies. **Prerequisite(s):** ECO 241 and ECO 243 and senior standing. **CC:** SOCS

ECO 498 - Economics Senior Thesis 1

Course Units: 0.0 Independent research thesis. **Prerequisite(s):** A minimum grade of C in each of the courses in the core sequence of ECO 241 , ECO 242 , ECO 243 , at least one course in the area of the thesis and senior standing; ECO 498 is prerequisite to ECO 499 . **CC:** WS

ECO 499 - Economics Senior Thesis 2

Course Units: 2.0 Independent research thesis. **Prerequisite(s):** A minimum grade of C in each of the courses in the core sequence of ECO 241 , ECO 242 , ECO 243 , at least one course in the area of the thesis and senior standing; ECO 498 is prerequisite to ECO 499. **CC:** WS

- and **two** other courses in economics

ECO 364 - Business Analytics

Course Units: 1.0 This course is about creating business insights from big data. The learning objective is to develop three abilities. The first is the ability to manipulate big data. This includes downloading, merging, appending and reshaping data, and creating new variables. Second is the ability to analyze data. This includes exploratory data analysis, visualization, and sophisticated predictive algorithms including nearest neighbor, naive Bayes, decision trees, regression and others. We will pay special attention to validating our predictions using the train and test regimen. Finally, students will develop an ability to formulate questions that can be answered using big data, and lead to better business performance. This includes using data to improve marketing, pricing, investing capital, customer satisfaction, costs, etc. The data manipulation and analysis will be implemented by writing programs in statistical software. **Prerequisite(s):** ECO 243 (or STA 264) **CC:** SOCS

or

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

(or other versions of Introduction to Computer Science with advisor's consent)

ACC 100 - Intro to Accounting

Course Units: 1.0 A survey of selected topics within various areas of accounting, such as managerial accounting, financial accounting, and tax accounting. Emphasis will be on concepts and not on record-keeping.

Additional Requirements

Majors should consider taking additional courses in computer science, especially CSC 151. Majors are also encouraged to participate in a term abroad. Majors should normally complete the core sequence of ECO 241, ECO 242, and ECO 243 by the beginning of the junior year. Majors who have reached the junior year may not enroll in courses numbered below 240, except 100-level Economics electives. Students may count at most one 100-level Economics elective toward the major. Majors must have a minimum grade of C in each of the courses in the core sequence of ECO 241, ECO 242, and ECO 243 before taking ECO 498 - ECO 499. Students receiving a grade lower than C in any of the core sequences of ECO 241, ECO 242, and ECO 243 may repeat the core course only once.

Requirements for Honors in Economics:

Departmental honors require that a student enroll in and successfully complete the Honors Program. The eligibility requirements for the honors program in economics are, in addition to the college-wide requirements, (1) a minimum grade average of 3.3 in Economics 241, 242, and 243, (2) a minimum grade of "A minus" on the senior thesis; and (3) a presentation of their work. Fall-Winter students will present in the Economics Honors Poster Session winter term, and Winter-Spring students will present their work at the Steinmetz Symposium in the Spring term, as either a poster or an oral presentation. Fall-Winter thesis students are also encouraged to participate in the Steinmetz Symposium.

Course Selection Guidelines

Course Sequence: Students intending to major in economics should take ECO 101 in the first year, and complete MTH 105, MTH 110, or MTH 113 in the first year, or early in the sophomore year. They should also take one or more 200-level electives in the first or second year, since these courses are not open to junior and senior majors. In the sophomore year they should take the core ECO 241, ECO 242, ECO 243 sequence; the sequence need not be taken in numerical order but ECO 243 should normally not be taken first. Majors should complete several 300-level elective courses as juniors prior to enrolling in a senior thesis, including, where possible courses in the area of economics in which the thesis will be written.

Placement: The economics department gives credit for ECO 101 to students receiving a score of 5, 6, or 7 on the Higher Level International Baccalaureate exam, a grade of A or B on the economics A-levels, and a score of 4 or 5 on both the AP Microeconomics and Macroeconomics exams, but does not give credit for ECO 101 to students who have taken only one of the two AP exams, regardless of the score received.

Prerequisites: ECO 101 is a prerequisite for all courses in the department, unless otherwise indicated.

Master of Business in Healthcare Management

Dean: Diego Nocetti, Clarkson University Reh School of Business

Director of Healthcare Management Programs: Amber Stephenson (Located at Clarkson University Capital Region Campus)

Clarkson University offers accelerated Healthcare MBA programs for Union College students. Union College undergraduates are able to take selected graduate courses through the Clarkson University's Reh School of Business. These courses count for credit toward the Healthcare MBA program and count toward the bachelor's degree. All Union College academic majors provide a suitable foundation for the Clarkson Univesity Healthcare MBA program. Students in the accelerated program typically complete the Health care MBA with only one additional year of study beyond the bachelor's degree.

Please note: Union College students may take up to two Healthcare MBA courses without matriculation into the Healthcare MBA program. Please see the section below titled Clarkson University School of Business Courses Open to Undergraduates.

Admission: Students who wish to matriculate into the Healthcare MBA program should consult their Union College advisor and apply for admission to Clarkson University Reh School of Business in their sophomore, junior or the first term of their senior year.

Application requirements:

- Undergraduate transcript
- Optional Graduate Management Admission Test (GMAT)/GRE; however, while standardized tests are not currently required for admissions, the GMAT is required to be considered for merit scholarship once matriculated into the program.
- Two letters of recommendation
- Written statement that explains the motivation for pursuing a healthcare management degree.
- An undergraduate GPA of 3.0 or better is required for admission. Students that do not meet this benchmark, however, are encouraged to apply and may be admitted based on other strengths evident in their application file.

The Healthcare Management MBA degree is comprised of 16 courses. Union College accelerated students may take up to three Clarkson graduate-level courses while enrolled at Union College at no additional tuition. These courses double-count for both graduate and undergraduate credit. Students must receive approval from their Union College advisor to ensure the courses will count towards their undergraduate degree.

Accelerated students may commence taking courses in their junior year; however the bulk of graduate course work is typically completed in the senior and fifth years. Additional program and contact information for the Clarkson University Reh School of Business can be found on the Clarkson University website at https://www.clarkson.edu/graduate/healthcare-management.

Clarkson University Reh School of Business Courses Open to Undergraduates

Undergraduates who are not planning to enroll in the accelerated healthcare MBA program may take two graduate courses (no tuition due to Clarkson University). To register, students complete a one page application and submit an unofficial transcript. The courses listed below are open to undergraduates; however, Clarkson University School of Business maintains the right to limit the number of undergraduate students in each class to no more than five students.

For a complete description of these and other Clarkson University School of Business courses, see the catalog of the Clarkson University School of Business, available at www.clarkson.edu/graduate/healthcare-management.

Courses open to undergraduates:

AC604 - Financial and Managerial Accounting

HC600 - Introduction to Health Systems

HC605 - Health Operations

HC651 - Health Systems Management

HC626 - Health Marketing

HC674 - Health Law

HC617 - Health Finance

HC620 - Health Economics

HC680 - Managerial Epidemiology

HC650 - Health Policy Dynamics (Summer)

HC656 - Group Practice Management (Summer)

Union College undergraduate students interested in Clarkson University Reh School of Business graduate school courses or program should contact Amber Stephenson, Director of Healthcare Management Programs, Clarkson University Capital Region Campus (astephen@clarkson.edu).

Five-Year M.B.A. in Healthcare Management

Dean: Diego Nocetti, Clarkson University Reh School of Business

Director of Healthcare Management Programs: Amber Stephenson (Located at Clarkson University Capital Region Campus)

Clarkson University offers accelerated Healthcare MBA programs for Union College students. Union College undergraduates are able to take selected graduate courses through the Clarkson University's Reh School of Business. These courses count for credit toward the Healthcare MBA program and count toward the bachelor's degree. All Union College academic majors provide a suitable foundation for the Clarkson Univesity Healthcare MBA program. Students in the accelerated program typically complete the Health care MBA with only one additional year of study beyond the bachelor's degree.

Please note: Union College students may take up to two Healthcare MBA courses without matriculation into the Healthcare MBA program. Please see the section below titled Clarkson University School of Business Courses Open to Undergraduates.

Admission: Students who wish to matriculate into the Healthcare MBA program should consult their Union College advisor and apply for admission to Clarkson University Reh School of Business in their sophomore, junior or the first term of their senior year.

Application requirements:

- Undergraduate transcript
- Optional Graduate Management Admission Test (GMAT)/GRE; however, while standardized tests are not currently required for admissions, the GMAT is required to be considered for merit scholarship once matriculated into the program.
- Two letters of recommendation
- Written statement that explains the motivation for pursuing a healthcare management degree.
- An undergraduate GPA of 3.0 or better is required for admission. Students that do not meet this benchmark, however, are encouraged to apply and may be admitted based on other strengths evident in their application file.

The Healthcare Management MBA degree is comprised of 16 courses. Union College accelerated students may take up to three Clarkson graduate-level courses while enrolled at Union College at no additional tuition. These courses double-count for both graduate and undergraduate credit. Students must receive approval from their Union College advisor to ensure the courses will count towards their undergraduate degree.

Accelerated students may commence taking courses in their junior year; however the bulk of graduate course work is typically completed in the senior and fifth years. Additional program and contact information for the Clarkson University Reh School of Business can be found on the Clarkson University website at https://www.clarkson.edu/graduate/healthcare-management.

Clarkson University Reh School of Business Courses Open to Undergraduates

Undergraduates who are not planning to enroll in the accelerated healthcare MBA program may take two graduate courses (no tuition due to Clarkson University). To register, students complete a one page application and submit an unofficial transcript. The courses listed below are open to undergraduates; however, Clarkson University School of Business maintains the right to limit the number of undergraduate students in each class to no more than five students.

For a complete description of these and other Clarkson University School of Business courses, see the catalog of the Clarkson University School of Business, available at www.clarkson.edu/graduate/healthcare-management.

Courses open to undergraduates:

AC604 - Financial and Managerial Accounting

HC600 - Introduction to Health Systems

HC605 - Health Operations

HC651 - Health Systems Management

HC626 - Health Marketing

HC674 - Health Law

HC617 - Health Finance

HC620 - Health Economics

HC680 - Managerial Epidemiology

HC650 - Health Policy Dynamics (Summer)

HC656 - Group Practice Management (Summer)

Union College undergraduate students interested in Clarkson University Reh School of Business graduate school courses or program should contact Amber Stephenson, Director of Healthcare Management Programs, Clarkson University Capital Region Campus (astephen@clarkson.edu).

Mathematics

Chair: L. Khatami
Faculty: Professors R. Hoerl, J. Jauregui, B. Johnson, K. Lesh, L. Khatami, C. Tønnesen-Friedman, J. Wang; Associate Professors E. Gasparovic, J. Hatley, K. Plofker; Assistant Professors P. Mariano, J. Qian; Senior Lecturer P. Friedman; Visiting Assistant Professor R. Gajek-Leonard
Staff: J. Higgins (Administrative Assistant)

Mathematics Placement Exam

All incoming students are required to take a Mathematics Placement Exam (MPE). Students receive a recommendation concerning their first mathematics course based on the information they provide and their performance on the MPE. Students should consult this recommendation and their academic advisor before enrolling in a mathematics course.

Course Selection Guidelines

Placement: Students who earn a score of 5 on the AB Advanced Placement exam, or a score of 4 or 5 on the BC Advanced Placement exam may receive credit for MTH 110 and MTH 112 . Students who earn a score of 3 or 4 on the AB Advanced Placement exam, or a score of 3 on the BC Advanced Placement exam, or a 6 or 7 on the Higher Level Math IB (International Baccalaureate) exam may receive credit for MTH 110. Students with a 4 or a 5 on the Advanced Placement Statistics exam may receive credit for

STA 104 .

Financial and Actuarial Mathematics Minor

The Financial and Actuarial Mathematics minor is intended for students interested in obtaining a deep and technical knowledge in the intersection of probability, statistics, economics and finance. The program develops each student's problem solving, critical thinking, and communication skills within the liberal arts framework. The program introduces students to analytical, statistical and financial techniques used to understand, quantify, evaluate and manage risk. These techniques have applications in a broad range of industries but are particularly useful in insurance and actuarial science (life, property, casualty, health), finance, and financial engineering (pension management, pricing of financial instruments), and risk management (modeling climate change, managing public social programs).

Before taking the required courses in the minor, students should complete the prerequisite courses as soon as possible. Prerequisites include Calculus through MTH 117 (or IMP 121), MTH 199 or MTH 197, and ECO 101.

Students interested in this minor are recommended to take all the prerequisite courses preferably by the end of their winter term of their sophomore year.

Requirements for the Minor

Required courses for all minors (five courses):

One of the following:

ECO 241 - Microeconomic Analysis

Course Units: 1.0 **(TBD: Staff)** Theory of consumer choice; principles of production and analysis of cost phenomena; pricing and output decisions in competitive and noncompetitive markets; theory of distribution; general equilibrium analysis; introduction to welfare economics. **Prerequisite(s):** ECO 101 and, MTH 105 , MTH 110 or MTH 113 **Prereq/Corequisite(s):** A minimum grade of C in ECO-241 is required to register for ECO 498 **CC:** SOCS

ECO 242 - Macroeconomic Theory and Policy

Course Units: 1.0 Aggregate demand theory. Foundations of aggregate consumption, investment, money demand and money supply. Aggregate supply theory. Keynesian, monetarist, and rational expectations models. Economic growth theory. Unemployment, inflation and stabilization policy. **Prerequisite(s):** ECO 101 and, MTH 105 , MTH 110 , or MTH 113 **Prereq/Corequisite(s):** A minimum grade of C in ECO-242 is required to register for ECO 498 **CC:** SOCS

All of the following:

ECO 334 - Introduction to Financial Analysis

Course Units: 1.0 Fundamental concepts of finance (time value of money, risk, and rates of return); analysis of financial statements; bond and stock valuation; capital budgeting; cost of capital, leverage, and optimal capital structure; long-term debt management; dividend policy; mergers and acquisitions; case study of the performance of an enterprise which seeks to maximize shareholder wealth. **Prerequisite(s):** At least one of ECO 241 , ECO 242 , or ECO 243 **CC:** SOCS

MTH 227 - Financial Mathematics

Course Units: 1 This course covers the fundamentals of financial mathematics. We will apply mathematical concepts to calculating present and accumulated values for various streams of cash flows. We will learn the terminology associated with these calculations including simple and compound interest. We will examine various financial instruments including annuities, loans, bonds, stocks and interest rate swaps, and how these instruments can be used to solve various needs. The focus of the class is on being able to solve problems and perform relevant calculations. **Cross-Listed:** ECO 227 **Prerequisite(s):** ECO 101 and MTH 112 or MTH 113 .

MTH 228 - Probability Theory

Course Units: 1.0 An introduction to the theory of probability. Discrete and continuous random variables. Jointly distributed random variables, sums of random variables and properties of Expectation. Moment generating functions, inequalities, and Limit Theorems. Focus will be on both the theoretical aspects of probability and problem solving. Discussion of some of the probability problems encountered in actuarial, financial, and scientific fields. **Prerequisite(s):** MTH 197 or MTH 199 and MTH 117 (MTH 117 can be taken concurrently), or permission from the Chair. Note: Not open to students who have passed MTH 128 /STA 128 .

Electives (one course):

ACC 100 - Intro to Accounting

Course Units: 1.0 A survey of selected topics within various areas of accounting, such as managerial accounting, financial accounting, and tax accounting. Emphasis will be on concepts and not on record-keeping.

ECO 134 - Data Visualization

Course Units: 1.0 The digital world we live in generates vast amounts of data. This data has the potential to help us understand the world and make better decisions. This course is about representing data using the visual domain. We learn how to turn gigabytes of numbers into pictures and interactive displays. We will use the visual domain not only for communicating insights but also as a means of analysis. We will learn about data structures (how to connect to data), data aggregation (how to summarize data), and principles of design (how humans consume visual content). We will apply these concepts to business and economic data, including sales, financial performance, pricing, etc. The emphasis is on hands-on exercises and creation of new visualizations using data visualization software Tableau. **CC:** SOCS, JDQR **ISP:** STS

ECO 353 - Seminar in Econometrics

Course Units: 1.0 Application of econometric methods to economic problems, plus additional topics in econometrics selected from multicollinearity, serially correlated and heteroskedastic disturbance terms, systems of simultaneous equations, seasonal adjustment, distributed lag models, other time series topics. **Prerequisite(s):** ECO 241 or ECO 242 and ECO 243 **CC:** SOCS, WAC-R

ECO 364 - Business Analytics

Course Units: 1.0 This course is about creating business insights from big data. The learning objective is to develop three abilities. The first is the ability to manipulate big data. This includes downloading, merging, appending and reshaping data, and creating new variables. Second is the ability to analyze data. This includes exploratory data analysis, visualization, and sophisticated predictive algorithms including nearest neighbor, naive Bayes, decision trees, regression and others. We will pay special attention to validating our predictions using the train and test regimen. Finally, students will develop an ability to formulate questions that can be answered using big data, and lead to better business performance. This includes using data to improve marketing, pricing, investing capital, customer satisfaction, costs, etc. The data manipulation and analysis will be implemented by writing programs in statistical software. **Prerequisite(s):** ECO 243 (or STA 264) **CC:** SOCS

CSC 233 - Intro to Data Analytics

Course Units: 1.0

Data analytics, the process of analyzing, revealing, interpreting, and visualizing information concealed inside big data, is revolutionizing daily life, as used by companies such as Amazon, Google and Facebook, for the diagnosis of medical conditions or the way medical claims are handled, for investment strategies and real estate pricing, and in academia, with the analysis of historical texts, understanding the deliberations of the Supreme Court or the European Commission, or processing large amounts of genomics data.
In this class, students will be introduced to techniques to acquire data from the web, manipulate and pre-process data into manageable forms, perform analyses from a description and predictive standpoint, and learn the basics of visualizing the results, all with a focus on story telling through data, enhancing data literacy. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 . **CC:** SET

CSC 234 - Data Visualization

Course Units: 1.0 Data has a story which has to be told! Data visualization is all around us, in print and in electronic media. Some of it is accurate and effective, while some is extremely unclear, confusing, or misleading. In this course we will study various approaches to information visualization and associated data analysis techniques. How do we take a lot of data, or very complex data, and present it in ways that allow it to communicate information clearly and effectively? The course will explore applications from science, medicine, social science, and humanities. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 . **CC:** SET

CSC 321 - Data Mining and Machine Learning

Course Units: 1.0 Introduces Data Mining, where previously unknown and potentially useful information is automatically extracted from data sources, using regularities or patterns of implicit information. Such patterns can be used to make predictions over future data, and be used to explain and understand the nature of that data. Machine Learning is one mechanism by which data mining is achieved. It is used to discover and extract information from raw data. This course will cover tools and techniques of machine learning that are used in practical data mining. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 329 - Neural Networks

Course Units: 1.0 **(TBD: Staff) Cross-Listed:** ECE 329

STA 164 - Strategies of Experimentation: Statistical Design and Analysis of Experiments

Course Units: 1.0 Experimentation is at the heart of the scientific method, both in the physical and social sciences. Not only do experiments validate or disprove existing hypotheses, but often unexpected results lead to the development of new hypotheses and new theoretical understanding. This course will focus on strategies to accelerate the scientific method when experimenting with multiple variables. Specific topics include design options, such as simple comparative experiments, factorials and fractional factorials, and response surface designs, as well as analysis methods such as graphical methods, analysis of variance, and regression models. **Prerequisite(s):** One of STA 104 ,STA 128 /MTH 128 , STA 264 , STA228/MTH 228 , MER 301, ECO 243, PSY 200 or permission from the Chair. **CC:** QMR **ISP:** ENS

STA 264 - Regression Analysis

Course Units: 1.0 Regression analysis is one of the most important and influential methods in statistics, finding application in virtually all disciplines, from business to healthcare to sociology to the hard sciences. This course will cover both the science of regression analysis - its underlying mathematical theory, as well as the art of its practical application. The course project will involve development of a regression model to fit a real data set. Lectures will be given primarily in matrix notation, i.e., using linear algebra. While the course will not be all-encompassing in itself due to time constraints, it would be good preparation for more advanced modeling courses involving data mining, machine learning, "Big Data", and so on. Prior understanding of statistical concepts is assumed **Prerequisite(s):** MTH 115 and one of STA 104 , ECO 243, STA 164 , PSY 200, MER 301 or permission from the Chair. **ISP:** ENS

STA 364 - Big Data Analytics

Course Units: 1.0 This course focuses on the analysis of large data sets in diverse application areas using statistical programming languages. Students will develop an understanding of the role of machine learning methods within the context of the scientific method. They will analyze real data sets using downloadable statistical programming packages, including on a course project of their own choosing. This analysis will include exploratory data analysis, visualization, and use of more sophisticated classification and predictive algorithms including nearest neighbor, naïve Bayes, classification and regression trees (CART), neural networks, and others. During the course we will pay special attention to validating models using the "train and test" regimen, as well as through cross validation and bootstrapping. In the process of studying the machine learning methods themselves, students will develop an ability to manipulate big data to accomplish the previous objectives. This includes downloading, merging, appending and reshaping data, and creating new variables. Successful completion of this course would be advantageous for those considering graduate study or employment in the areas of statistics, data science, machine learning, computer science, econometrics, or related disciplines. **Prerequisite(s):** STA 264 or ECO 243 or permission from the Chair. **CC:** JDQR

STA 490 - Statistics Independent Study

Course Units: 1.0 Independent study in a particular area of statistics under the supervision of a faculty member. **Note:** Subject to faculty availability and Chair approval.

MTH 140 - Applied Linear Algebra

Course Units: 1.0 Linear algebra has an enormous number of applications to the sciences and engineering. This course will cover the basics of linear algebra in Euclidean n-space, including linear systems, linear transformations, determinants, eigenvalues and eigenvectors, orthogonality, and the singular value decomposition. An emphasis will be placed on applications, chosen from least-squares fitting, linear programming, image compression, Markov chains and discrete dynamical systems, computer graphics, principal component analysis, the Google PageRank algorithm, and others. Computer software such as MATLAB or Mathematica will be used in this course to perform numerical calculations. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 . **Note:** Credit will not normally be given for both MTH 140 and MTH 340 . Exceptions require approval of a proposal from the student to the department chair.

MTH 238 - Methods of Applied Mathematics

Course Units: 1.0 An introduction to the fundamental concepts and techniques in applied mathematics. Topics may include dimensional analysis, scaling, perturbation theory, boundary layer analysis, differential and integral equations, calculus of variations, optimization, and eigenvalue problems. The emphasis is the use of mathematics to quantify and solve problems arising from physical, chemical, biological, and economic phenomena. **Prerequisite(s):** MTH 130 or MTH 234 and MTH 197 or MTH 199

MTH 334 - Partial Differential Equations

Course Units: 1.0 Partial differential equations (PDEs) are formulated to describe a wide range of phenomena in engineering, natural and social sciences. We will study the theories and models of PDEs. Analytical and numerical methods are introduced to examine the solutions of elliptic, parabolic, and hyperbolic types of PDEs. Topics include the formulation of PDEs using conservation laws, classification, solution methods for the wave, diffusion, and Laplace equations, boundary value problems, separation of variables, Green's functions, Fourier series and transforms, stability and convergence. Students will be exposed to both theoretical and applied aspects. Computing tools (such as Mathematica or Mathlab) will also be introduced. **Prereq/Corequisite(s):** MTH 234 or (MTH 130 + MTH 199), or permission from the Chair.

MTH 340 - Linear Algebra

Course Units: 1.0 Vector spaces, linear transformations, inner product and dual spaces, eigenvalues and eigenvectors, special topics. **Prerequisite(s):** One of MTH 115, MTH 115H or IMP 121 and one of MTH 219, MTH 221, MTH 224, MTH 228 , MTH 235, MTH 248 , or permission from the Chair. **Note:** Credit will not normally be given for both MTH 140 and MTH 340. Exceptions require approval of a proposal from the student to the department chair.

Mathematics (ID), B.S.

Mathematics Requirements for any Interdepartmental Major having Mathematics as a Component:

A student seeking an interdepartmental major with mathematics as a component must submit a proposal for approval by the department chair. The proposal will give a rationale for the choice of an interdepartmental major and indicate the list of courses in both departments that are to be part of the major. Before submitting a proposal, please contact the department chair (mathchair@union.edu) so they can advise you and supply you with the correct form.

An interdepartmental major with mathematics as a component requires seven courses in the department numbered 115 or higher, including the following courses:

- MTH 115
- At least one of the following: MTH 117, MTH 130 or MTH 234
- MTH 199
- Four courses from the lists below, including at least **one** from List 1. (One-time course offerings can be substituted for courses on these lists at the discretion of the chair).

List 1:

MTH 332 - Abstract Algebra 1

Course Units: 1.0 Algebraic structures including groups, rings and fields. **Prerequisite(s):** One of MTH 219 , MTH 221 , MTH 224 , MTH 228 , MTH 235, MTH 248 or permission from the Chair.

MTH 336 - Real Analysis

Course Units: 1.0 An introductory course in analysis. Completeness and Cauchy sequences; open, closed, connected, and compact sets; continuous functions, uniform continuity, and uniform convergence; the extreme and intermediate value theorems; differentiation and the mean value theorem; Riemann integration and the fundamental theorem of calculus. Additional topics may be covered, including the contraction mapping principle and sets of measure zero. **Prerequisite(s):** MTH 332 or MTH 340 or permission from the Chair.

MTH 340 - Linear Algebra

Course Units: 1.0 Vector spaces, linear transformations, inner product and dual spaces, eigenvalues and eigenvectors, special topics. **Prerequisite(s):** One of MTH 115, MTH 115H or IMP 121 and one of MTH 219, MTH 221, MTH 224, MTH 228 , MTH 235, MTH 248 , or permission from the Chair. **Note:** Credit will not normally be given for both MTH 140 and MTH 340. Exceptions require approval of a proposal from the student to the department chair.

MTH 430 - Complex Analysis

Course Units: 1.0 An introduction to analytic functions of a complex variable. **Prerequisite(s):** One 300-level MTH course or permission from the Chair.

MTH 432 - Abstract Algebra 2

Course Units: 1.0 Continuation of MTH 332. Certain topics will be selected for more intensive study. **Prerequisite(s):** MTH 332

MTH 436 - Topology

Course Units: 1.0 Topological spaces, connectedness, compactness, continuous mappings and homeomorphisms. **Prerequisite(s):** One 300-level MTH course or permission from the Chair.

MTH 437 - Real Analysis 2

Course Units: 1.0 A second course in real analysis. Topics may include the construction of Lebesgue measure and the Lebesgue integral, limit theorems and Fubini's theorem, differentiation in several variables and the inverse and implicit function theorems, and convergence of series of functions. **Prerequisite(s):** MTH 336 and MTH 340 , or permission from the Chair.

MTH 448 - Differential Geometry

Course Units: 1.0 A study of curves and surfaces in 3-space. Topics include arc length, curvature, torsion, the Frenet frame, the first and second fundamental forms, normal curvature, and Gaussian curvature. . **Prerequisite(s):** MTH 117 and MTH 340, or permission from the Chair.

MTH 480 - Foundations of Mathematics

Course Units: 1.0 Propositional and predicate logic, Godel completeness theorem, introduction to recursion theory. **Cross-Listed:** PHL 480 **Prerequisite(s):** MTH 332 or permission from the Chair. **CC:** HUM

List 2:

MTH 219 - Topics in Discrete Mathematics

Course Units: 1.0 Topics may include graph theory, partially ordered sets, algebraic coding theory, computational complexity, number theory. **Prerequisite(s):** MTH 199 or permission from the Chair.

MTH 221 - Mathematical Cryptology

Course Units: 1.0 An in-depth look at the mathematical theory underlying modern methods to accomplish the secret transmission of messages, as well as other tasks related to data security, privacy, and authentication. **Note:** Not normally open to students who have passed MTH 235 or MTH 051. **Prerequisite(s):** MTH 199 or permission from the Chair. **CC:** GDQR **ISP:** STS

MTH 224 - Geometry

Course Units: 1.0 Topics in transformation geometry, or projective, affine, Euclidean, and/or non-Euclidean geometries. **Prerequisite(s):** MTH 199 or permission from the Chair.

MTH 228 - Probability Theory

Course Units: 1.0 An introduction to the theory of probability. Discrete and continuous random variables. Jointly distributed random variables, sums of random variables and properties of Expectation. Moment generating functions, inequalities, and Limit Theorems. Focus will be on both the theoretical aspects of probability and problem solving. Discussion of some of the probability problems encountered in actuarial, financial, and scientific fields. **Prerequisite(s):** MTH 197 or MTH 199 and MTH 117 (MTH 117 can be taken concurrently), or permission from the Chair. Note: Not open to students who have passed MTH 128 /STA 128 .

MTH 235 - Number Theory

Course Units: 1.0 Properties of natural numbers including divisibility, prime numbers, congruences, special number theoretic functions and quadratic reciprocity. **Prerequisite(s):** MTH 199 or permission from the Chair. **Prereq/Corequisite(s):** MTH 235 normally is closed to students who have passed MTH 221 .

MTH 248 - Intermediate Topics in Mathematics

Course Units: 1.0 An exploration into topics chosen from different areas of pure mathematics, this course is divided into three sequential units, each taught by a different instructor. The topics are 1) convex geometry (including convex sets, linear and affine spans, simplices, and applications to Nash's Bargaining Theorem in Game Theory); 2) continued fractions and their use in number theory, such as in solving linear Dophantine equations and in finding rational approximations to real numbers; 3) introduction to analysis (sequences, series, convergence tests, complex series, and Euler's formula). Students will receive a single grade for the entire course. **Prerequisite(s):** MTH 199 or permission from the Chair. **Note:** Not normally open to students who have completed MTH 257 or MTH 336 by the end of the term, except by permission of the math department Chair. **CC:** QMR

MTH 325 - Knot Theory

Course Units: 1.0 An introduction to the mathematical study of knots, including colorability, chirality, genus, and the Jones polynomial. Course will also explore the relationship between mathematical knots and structures in molecular chemistry and biology, and physics. **Prerequisite(s):** One of MTH 221, MTH 235, MTH 332, or MTH 340, or permission of the Chair.

MTH 334 - Partial Differential Equations

Course Units: 1.0 Partial differential equations (PDEs) are formulated to describe a wide range of phenomena in engineering, natural and social sciences. We will study the theories and models of PDEs. Analytical and numerical methods are introduced to examine the solutions of elliptic, parabolic, and hyperbolic types of PDEs. Topics include the formulation of PDEs using conservation laws, classification, solution methods for the wave, diffusion, and Laplace equations, boundary value problems, separation of variables, Green's functions, Fourier series and transforms, stability and convergence. Students will be exposed to both theoretical and applied aspects. Computing tools (such as Mathematica or Mathlab) will also be introduced. **Prereq/Corequisite(s):** MTH 234 or (MTH 130 + MTH 199), or permission from the Chair.

Requirements for Honors in Mathematics:

Candidates for departmental honors in Mathematics, or in any interdisciplinary program of which Mathematics is a part, must fulfill the college-wide criteria for honors. In addition, they must have a grade point average of at least 3.5 in courses in the Mathematics Department numbered 199 and above, take at least two MTH courses at the 400-level that do not satisfy the WS requirement, and either complete a two-term honors thesis in the Mathematics Department with a grade of A or A-, or complete a one-term honors thesis in the Mathematics Department with a grade of A or A- and take a third 400-level MTH course that does not satisfy the WS requirement.

Mathematics Minor

Requirements for a Minor in Mathematics:

Five courses in the department (MTH or STA) numbered 115 or higher, including MTH 199 and at least two courses having MTH 199 as a prerequisite.

Mathematics, B.S.

Requirements for the Major:

Twelve courses in the Mathematics Department (MTH or STA) numbered 101 or higher including the following courses:

- **One of the following single-variable calculus sequences:**

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

OR

MTH 110 - Calculus 1: Differential Calculus

Course Units: 1.0 Differential calculus of functions of a single variable. Limits, continuity, differentiation, computational aspects of Maclaurin and Taylor polynomials and series, and applications. **Note:** Not intended for students who have passed MTH 059 ,MTH 105 , MTH 113 , MTH 110P, or MTH 113P. **CC:** QMR **ISP:** ENS

and

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

OR

MTH 105 - Differential Calculus with Precalculus

Course Units: 1.0 Differential calculus of functions of a single variable, supplemented with supporting precalculus. Limits, continuity, differentiation, and applications. **CC:** QMR **ISP:** ENS **Note:** Not intended for students with credits for MTH 059 ,MTH 110 , MTH 113 , MTH 110P or MTH 113P.

and

MTH 112 -Calculus 2: Integral Calculus

All of the following required courses:

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

MTH 199 - Introduction to Logic and Set Theory

Course Units: 1.0 Designed to enable the student to develop the ability to understand and communicate mathematical arguments. Logic and set theory from the core. Selected topics are covered at the discretion of the instructor. For those considering any form of mathematics major, the department recommends that Math 199 be taken by fall term of the sophomore year, if possible. **Note:** Credit is not normally given for both MTH 197 and MTH 199. MTH 115 is usually taken before MTH 199. **Prerequisite(s):** One of MTH 112, MTH 113 ,MTH 115 , MTH 115H, MTH 117 , IMP 120 or permission of the department chair. **CC:** WAC, WAC-R

MTH 332 - Abstract Algebra 1

Course Units: 1.0 Algebraic structures including groups, rings and fields. **Prerequisite(s):** One of MTH 219 , MTH 221 , MTH 224 , MTH 228 , MTH 235, MTH 248 or permission from the Chair.

MTH 336 - Real Analysis

Course Units: 1.0 An introductory course in analysis. Completeness and Cauchy sequences; open, closed, connected, and compact sets; continuous functions, uniform continuity, and uniform convergence; the extreme and intermediate value theorems; differentiation and the mean value theorem; Riemann integration and the fundamental theorem of calculus. Additional topics may be covered, including the contraction mapping principle and sets of measure zero. **Prerequisite(s):** MTH 332 or MTH 340 or permission from the Chair.

MTH 340 - Linear Algebra

Course Units: 1.0 Vector spaces, linear transformations, inner product and dual spaces, eigenvalues and eigenvectors, special topics. **Prerequisite(s):** One of MTH 115, MTH 115H or IMP 121 and one of MTH 219, MTH 221, MTH 224, MTH 228 , MTH 235, MTH 248 , or permission from the Chair. **Note:** Credit will not normally be given for both MTH 140 and MTH 340. Exceptions require approval of a proposal from the student to the department chair.

- At least five MTH-coded courses that do not satisfy the WS requirement and are numbered 200-level or higher.
- A course in the department that satisfies the senior writing (WS) requirement
- Additionally, math majors are required to take a course from outside of the department in an area with deep connections with mathematics, drawn from a list of CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 , ECO 241 , ECO 242 , ECO 243 , ECO 338 , IMP 120 , PHY 120 , PHY 121 , PHL 231 . Students may petition the math department chair to accept an alternative course.
  It is recommended that students who are considering graduate work in mathematics should study at least one foreign languages used in international mathematics research journals and/or required by graduate programs in mathematics (typically French, Russian, German, and/or Chinese). Faculty members in the Math Department can advise on what language(s) to choose, if desired.
  Those considering a master's program in teaching are advised to incorporate MTH 228, MTH 224, and Computer Science into their undergraduate program.

Requirements for Honors in Mathematics:

Candidates for departmental honors in Mathematics, or in any interdisciplinary program of which Mathematics is a part, must fulfill the college-wide criteria for honors. In addition, they must have a grade point average of at least 3.5 in courses in the Mathematics Department numbered 199 and above, take at least two MTH courses at the 400-level that do not satisfy the WS requirement, and either complete a two-term honors thesis in the Mathematics Department with a grade of A or A-, or complete a one-term honors thesis in the Mathematics Department with a grade of A or A- and take a third 400-level MTH course that does not satisfy the WS requirement.

Statistics Minor

The Statistics minor is intended for students who are interested in developing broad statistical skills, and also for students who may be considering graduate work in statistics, analytics, actuarial science, or a related discipline. Students will develop foundational understanding of probability and statistics, learn how to produce high-quality data from randomized scientific studies, analyze data using regression and more advanced machine learning methods, and develop software skills, including statistical programming languages.

For students who transfer credit for STA 104, such as through AP Statistics, the minor will require the other four core courses and one elective. Students with strong quantitative backgrounds who skip STA 104 can substitute a second elective for STA 104.

Listed courses may not be taught each year, requiring some degree of advance planning to complete the minor. Students will be able to complete the Statistics minor in a timely fashion if they declare a Statistics minor, having completed calculus through MTH 115 and also STA 104, by the end of their sophomore year. (Completion of calculus up to MTH 115 is a prerequisite for STA 264)

Requirements for the minor:

1. Required courses for all minors (five courses):

One of the following:

STA 104 - Introduction to Statistics

Course Units: 1.0 This course is intended to provide the conceptual foundations, and also analytical skills, for students to be able to quantify uncertainty, and further, to make rational decisions in the face of uncertainty. It addresses collection of high-quality data, basic statistical analysis of such data, including use of computer software, and drawing actionable conclusions from analyses. These conclusions include understanding the limitations of statistical analyses. The integration of subject matter knowledge with data analysis within the sequential cycle of scientific inquiry will be emphasized. This course is also intended to prepare students for more advanced statistics courses, such as those in experimental design or regression analysis. **Prereq/Corequisite(s):** This course is designed for first year students and sophomores, and preference will be given to such students in accepting petitions. Not open to students who have passed STA 064, STA 164, STA 264, MTH 115 , MER 301, IMP 120 , ECO 243 or PSY 200 **CC:** QMR, JDQR **ISP:** ENS

or

ECO 243 - Introduction to Econometrics

Course Units: 1.0 Descriptive statistics, probability, random variables and their distributions, sampling, statistical inference including confidence interval estimation, hypothesis testing, and regression analysis. Introduction to economic research using statistical methods to test theories. **Prerequisite(s):** ECO 101 **Prereq/Corequisite(s):** A minimum grade of C in ECO-243 is required to register for ECO 498 **CC:** SOCS **ISP:** ENS

or

MER 301 - Engineering Reliability

Course Units: 1.0 Engineering statistics; uncertainty analysis, data collection, computational statistics, probability, statistical inference, confidence limits, tolerance intervals, analysis of variance, least squares regression, and introduction to design of experiments. **Prerequisite(s):** MTH 115 or IMP 121. **CC:** SET

or

PSY 200 - Statistical Methods in Psychology

Course Units: 1.0 The descriptive and inferential statistical procedures used by researchers to explain and analyze their results. Mean, variance, correlation, hypothesis testing using t-test, ANOVA, and nonparametric tests. **Prerequisite(s):** PSY 100 , PSY 210 / BIO 210 or (BIO 103 and BIO 104) **ISP:** ENS

or

- **Advanced Placement credit for Statistics (at least a 4 on the AP exam).**

All of the following:

MTH 128 - Probability

Course Units: 1.0 This course is a survey of the basic concepts of probability theory including permutations and combinations, conditional probability, Bayes' formula, independence, discrete and continuous random variables, expectation and variance, the Central Limit Theorem, and selected topics. **Cross-Listed:** STA 128 **Prerequisite(s):** One of MTH 112, MTH 113, MTH 112P, MTH 113P, IMP 120, or IMP 121. **Note:** Not open to students who have passed or are taking MTH 199. Students who intend to minor in Mathematics or Financial and Actuarial Mathematics, or major in Mathematics should take MTH 228 /STA 228, as credit is not normally given for both MTH 128/STA 128 and MTH 228 /STA 228.

or

MTH 228 - Probability Theory

Course Units: 1.0 An introduction to the theory of probability. Discrete and continuous random variables. Jointly distributed random variables, sums of random variables and properties of Expectation. Moment generating functions, inequalities, and Limit Theorems. Focus will be on both the theoretical aspects of probability and problem solving. Discussion of some of the probability problems encountered in actuarial, financial, and scientific fields. **Prerequisite(s):** MTH 197 or MTH 199 and MTH 117 (MTH 117 can be taken concurrently), or permission from the Chair. Note: Not open to students who have passed MTH 128 /STA 128 .

STA 164 - Strategies of Experimentation: Statistical Design and Analysis of Experiments

Course Units: 1.0 Experimentation is at the heart of the scientific method, both in the physical and social sciences. Not only do experiments validate or disprove existing hypotheses, but often unexpected results lead to the development of new hypotheses and new theoretical understanding. This course will focus on strategies to accelerate the scientific method when experimenting with multiple variables. Specific topics include design options, such as simple comparative experiments, factorials and fractional factorials, and response surface designs, as well as analysis methods such as graphical methods, analysis of variance, and regression models. **Prerequisite(s):** One of STA 104 ,STA 128 /MTH 128 , STA 264 , STA228/MTH 228 , MER 301, ECO 243, PSY 200 or permission from the Chair. **CC:** QMR **ISP:** ENS

STA 264 - Regression Analysis

Course Units: 1.0 Regression analysis is one of the most important and influential methods in statistics, finding application in virtually all disciplines, from business to healthcare to sociology to the hard sciences. This course will cover both the science of regression analysis - its underlying mathematical theory, as well as the art of its practical application. The course project will involve development of a regression model to fit a real data set. Lectures will be given primarily in matrix notation, i.e., using linear algebra. While the course will not be all-encompassing in itself due to time constraints, it would be good preparation for more advanced modeling courses involving data mining, machine learning, "Big Data", and so on. Prior understanding of statistical concepts is assumed **Prerequisite(s):** MTH 115 and one of STA 104 , ECO 243, STA 164 , PSY 200, MER 301 or permission from the Chair. **ISP:** ENS

One of the following:

STA 364 - Big Data Analytics

Course Units: 1.0 This course focuses on the analysis of large data sets in diverse application areas using statistical programming languages. Students will develop an understanding of the role of machine learning methods within the context of the scientific method. They will analyze real data sets using downloadable statistical programming packages, including on a course project of their own choosing. This analysis will include exploratory data analysis, visualization, and use of more sophisticated classification and predictive algorithms including nearest neighbor, naïve Bayes, classification and regression trees (CART), neural networks, and others. During the course we will pay special attention to validating models using the "train and test" regimen, as well as through cross validation and bootstrapping. In the process of studying the machine learning methods themselves, students will develop an ability to manipulate big data to accomplish the previous objectives. This includes downloading, merging, appending and reshaping data, and creating new variables. Successful completion of this course would be advantageous for those considering graduate study or employment in the areas of statistics, data science, machine learning, computer science, econometrics, or related disciplines. **Prerequisite(s):** STA 264 or ECO 243 or permission from the Chair. **CC:** JDQR

or

ECO 364 - Business Analytics

Course Units: 1.0 This course is about creating business insights from big data. The learning objective is to develop three abilities. The first is the ability to manipulate big data. This includes downloading, merging, appending and reshaping data, and creating new variables. Second is the ability to analyze data. This includes exploratory data analysis, visualization, and sophisticated predictive algorithms including nearest neighbor, naive Bayes, decision trees, regression and others. We will pay special attention to validating our predictions using the train and test regimen. Finally, students will develop an ability to formulate questions that can be answered using big data, and lead to better business performance. This includes using data to improve marketing, pricing, investing capital, customer satisfaction, costs, etc. The data manipulation and analysis will be implemented by writing programs in statistical software. **Prerequisite(s):** ECO 243 (or STA 264) **CC:** SOCS

2. Electives (one or two courses):

CSC 234 - Data Visualization

Course Units: 1.0 Data has a story which has to be told! Data visualization is all around us, in print and in electronic media. Some of it is accurate and effective, while some is extremely unclear, confusing, or misleading. In this course we will study various approaches to information visualization and associated data analysis techniques. How do we take a lot of data, or very complex data, and present it in ways that allow it to communicate information clearly and effectively? The course will explore applications from science, medicine, social science, and humanities. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 . **CC:** SET

CSC 321 - Data Mining and Machine Learning

Course Units: 1.0 Introduces Data Mining, where previously unknown and potentially useful information is automatically extracted from data sources, using regularities or patterns of implicit information. Such patterns can be used to make predictions over future data, and be used to explain and understand the nature of that data. Machine Learning is one mechanism by which data mining is achieved. It is used to discover and extract information from raw data. This course will cover tools and techniques of machine learning that are used in practical data mining. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 329 - Neural Networks

Course Units: 1.0 **(TBD: Staff) Cross-Listed:** ECE 329

ECO 353 - Seminar in Econometrics

Course Units: 1.0 Application of econometric methods to economic problems, plus additional topics in econometrics selected from multicollinearity, serially correlated and heteroskedastic disturbance terms, systems of simultaneous equations, seasonal adjustment, distributed lag models, other time series topics. **Prerequisite(s):** ECO 241 or ECO 242 and ECO 243 **CC:** SOCS, WAC-R

MTH 140 - Applied Linear Algebra

Course Units: 1.0 Linear algebra has an enormous number of applications to the sciences and engineering. This course will cover the basics of linear algebra in Euclidean n-space, including linear systems, linear transformations, determinants, eigenvalues and eigenvectors, orthogonality, and the singular value decomposition. An emphasis will be placed on applications, chosen from least-squares fitting, linear programming, image compression, Markov chains and discrete dynamical systems, computer graphics, principal component analysis, the Google PageRank algorithm, and others. Computer software such as MATLAB or Mathematica will be used in this course to perform numerical calculations. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 . **Note:** Credit will not normally be given for both MTH 140 and MTH 340 . Exceptions require approval of a proposal from the student to the department chair.

MTH 227 - Financial Mathematics

Course Units: 1 This course covers the fundamentals of financial mathematics. We will apply mathematical concepts to calculating present and accumulated values for various streams of cash flows. We will learn the terminology associated with these calculations including simple and compound interest. We will examine various financial instruments including annuities, loans, bonds, stocks and interest rate swaps, and how these instruments can be used to solve various needs. The focus of the class is on being able to solve problems and perform relevant calculations. **Cross-Listed:** ECO 227 **Prerequisite(s):** ECO 101 and MTH 112 or MTH 113 .

MTH 238 - Methods of Applied Mathematics

Course Units: 1.0 An introduction to the fundamental concepts and techniques in applied mathematics. Topics may include dimensional analysis, scaling, perturbation theory, boundary layer analysis, differential and integral equations, calculus of variations, optimization, and eigenvalue problems. The emphasis is the use of mathematics to quantify and solve problems arising from physical, chemical, biological, and economic phenomena. **Prerequisite(s):** MTH 130 or MTH 234 and MTH 197 or MTH 199

MTH 340 - Linear Algebra

Course Units: 1.0 Vector spaces, linear transformations, inner product and dual spaces, eigenvalues and eigenvectors, special topics. **Prerequisite(s):** One of MTH 115, MTH 115H or IMP 121 and one of MTH 219, MTH 221, MTH 224, MTH 228 , MTH 235, MTH 248 , or permission from the Chair. **Note:** Credit will not normally be given for both MTH 140 and MTH 340. Exceptions require approval of a proposal from the student to the department chair.

STA 490 - Statistics Independent Study

Course Units: 1.0 Independent study in a particular area of statistics under the supervision of a faculty member. **Note:** Subject to faculty availability and Chair approval.

- **Senior Thesis** (subject to faculty availability and chair approval).

Mechanical Engineering

Chair: Associate Professor A. Hamed
Faculty: Professors A. Anderson, B. Bruno, R. Cortez, W. Keat, A. Ramasubramanian, A. Rapoff; Associate Professors A. Hamed, D. Hodgson; Assistant Professor Y. Guan, Y. Stehle; Lecturer H. Miao, Visiting Assistant Professors H. Al Babaa, J. Kuppers
Staff: S. Gorski (Technology Coordinator), Jocelyn Rockower (Administrative Assistant)

The Mechanical Engineering Department at Union College is committed to thoroughly preparing students in the fundamentals of mechanical engineering and instilling a passion for life-long learning by building on the values of a liberal arts education. The Mechanical Engineering program is accredited by the Engineering Accreditation Commission of ABET Abet.org

Mechanical Engineering Minor

Requirements for the Minor:

The Mechanical Engineering Minor is comprised of MER 201, MER 231, and any four additional courses in Mechanical Engineering except MER 010, MER 262 , MER 291 , MER 292 , MER 293 , MER 295H , MER 296H , MER 297H , and MER 490 and higher. Students can petition the Mechanical Engineering Department Chair to have at most two equivalent non-MER courses count for the ME minor.

Mechanical Engineering, B.S.

Requirements for the Major:

Course requirements with a typical schedule are given for the Class of 2028 below. Students should consult their academic advisor about the scheduling and sequencing of courses. A total of 40 courses is required for the major.

First Year*

ESC 100 - Exploring Engineering

Course Units: 1.0 An introduction to engineering including fundamental topics core to engineering. The course includes a weekly design studio that emphasizes engineering design, teamwork, technical writing and ethics through several individual and team design projects. Not available to junior or senior engineering students. **Corequisite(s):** ESC 100L **CC:** SET, GETS **ISP:** STS **Note:** General engineering course common to more than one program.

MER 101 - Engineering Graphics

Course Units: 1.0 Engineering graphics with emphasis on engineering drawings, introduction to solid modeling, and manufacturing. Topics include sketching, descriptive geometry, tolerances, sectioning, auxiliary views, assembly drawings, CAD, and manufacturing techniques. **Corequisite(s):** MER-101L **CC:** SET, GCAD

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

CHM 101 - Introductory Chemistry 1

Course Units: 1.0 This is an introductory course that focuses on atomic and molecular structure, chemical bonding, stoichiometry, aqueous chemical reactions, and the properties of gases, liquids, solids and solutions. **Prerequisite(s):** Not open to students who have scored 4 or 5 on the AP Chemistry Exam or who have completed CHM 110H . All students who wish to enroll in an introductory chemistry course must take a placement examination to determine the appropriate course. See Course Selection Guidelines for more information on placement. **Corequisite(s):** CHM 101L **CC:** SCLB **Lecture/Lab Hours** Three lab hours/week,6/10 weeks. **ISP:** ENS

- Introductory Computer Science Course ***
  Elective

Sophomore Year

ECE 222 - Introduction to Circuits and Electronics

Course Units: 1.0 Electrical quantities, circuit principles, analysis and response of basic circuits, semiconductor physics, diodes, transistors, and operational amplifiers. Includes a weekly lab. **Prerequisite(s):** PHY 121 or IMP 121 **Corequisite(s):** ECE 222L **Prereq/Corequisite(s):** Not open to Electrical, Computer, or Biomedical Engineering majors, or to students who have taken ECE 225

MER 201 - Statics

Course Units: 1.0 A basic engineering mechanics course concerned with the equilibrium of non-deformable bodies at rest or moving with a constant velocity on a straight path. Free body diagrams, Newtonian mechanics, vectors and the calculus are used to solve problems throughout the course. Topics include force vectors and systems, equilibrium,

trusses, frames, friction, center of gravity, centroids, moments of inertia and fluid hydrostatics. **Prerequisite(s):** [PHY 120 and (MTH 112 or MTH 113)] or IMP 120

MER 212 - Dynamics

Course Units: 1.0 A basic engineering mechanics course concerned with the kinematics and kinetics of non-deformable particles and two dimensional bodies undergoing acceleratory motion. D'Alembert free body diagrams, Newtonian mechanics, energy approaches, vectors and the calculus are used to solve problems throughout the course. Topics include kinematics, force and acceleration, work and energy principles and impulse and momentum principles. Includes a design component. **Prerequisite(s):** MER 201 and (MTH 115 or IMP 121)

MER 213 - Material Science

Course Units: 1.0 A basic engineering science course dealing with crystal structure, imperfections in solids, diffusion, mechanical properties of metals, dislocations and strengthening mechanisms, phase diagrams, phase transformations in metals, structure and properties of ceramics, and polymeric structures. The principles formulated in materials science allow engineers to understand the nature and behavior of a wide variety of engineering materials. Includes a laboratory component. **Prerequisite(s):** CHM 101

MER 214 - Mechanics of Materials 1

Course Units: 1.0 A branch of applied mechanics that deals with the behavior of solid bodies subjected to various types of loading. The solid bodies considered in this course include axially-loaded members, shafts in torsion, thin shells, beams, and structures that are assemblies of these components. Strength of materials analysis determines the stresses, strains, and displacements produced by the loads. Includes a laboratory component. **Prerequisite(s):** MER 201 and MER 262 **Corequisite(s):** MER 214L **CC:** WAC

MER 231 - Thermodynamics 1

Course Units: 1.0 A basic engineering science course dealing with relations between heat and other forms of energy. Topics include: basic thermodynamic principles, properties of simple substances, energy and the first law of thermodynamics, entropy and the second law of thermodynamics, and ideal cycle analysis. Elementary environmental economic and sustainability considerations related to thermodynamic processes. **Prerequisite(s):** PHY 120 & (MTH 112 or MTH 113) or IMP 120. **Corequisite(s):** CHM 101 **CC:** ENS

MER 232 - Thermodynamics 2

Course Units: 1.0 Application of the fundamental laws of thermodynamics to the analysis of energy conversion devices, systems, and processes. The course moves beyond MER 231 through the analyses of more realistic power-producing and refrigeration systems, systems in which there are more than one substance present, and reactive systems. Factors that govern energy conversion processes and impact on the efficiency of those processes are studied with attention given to environmental and sustainability implications. **Prerequisite(s):** MER 231, CHM 101.

MER 262 - Programming and Writing in ME

Course Units: 1 Project-based sophomore-level course for mechanical engineers that integrates three fundamental skills required for successful mechanical engineering communication: library research, data analysis, and scientific writing. The course teaches searching, interpreting, and communicating mechanical engineering literature. The basics of analyzing large
engineering datasets using MATLAB code are covered, including visualization and numerical

differentiation/integration. Conventions of writing in mechanical engineering are practiced through writing assignments based on analysis of large datasets. **Corequisite(s):** MER 201 or MER 231 **CC:** WAC-R

MTH 130 - Ordinary Differential Equations

Course Units: 1.0 Topics include first and second-order differential equations and first-order systems, including analytic, geometric, and numerical techniques, classification of first-order linear systems by eigenvalues, forcing and resonance, and the Laplace transform. Applications include but are not limited to population models, RC circuits, and damped and undamped harmonic oscillators. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 **Note:** Not open to students who have passed MTH 234 . **CC:** GDQR

- Elective****

Junior Year****

MER 301 - Engineering Reliability

Course Units: 1.0 Engineering statistics; uncertainty analysis, data collection, computational statistics, probability, statistical inference, confidence limits, tolerance intervals, analysis of variance, least squares regression, and introduction to design of experiments. **Prerequisite(s):** MTH 115 or IMP 121. **CC:** SET

MER 311 - Mechanics of Materials 2

Course Units: 1.0 Advanced topics in structural analysis including unsymmetric bending and deflection of beams, energy methods, torsion of noncylindrical members, stress and strain transformations, failure criteria, fracture mechanics, fatigue and column buckling. **Prerequisite(s):** MER 213, MER 214 **CC:** SET

MER 312 - Mechanisms and Machines

Course Units: 1.0 Linkage analysis and synthesis, cam design, machine dynamics, computer aided kinematic design, kinetics and balancing. Includes a design component **Prerequisite(s):** MER 212 **CC:** SET

MER 322 - Dynamics of Physical Systems

Course Units: 1.0 Time and frequency response of lumped-parameter mechanical, electrical, and fluid systems. Open-loop and closed-loop controllers are briefly covered, with an introduction on PID controller design. Includes a lab component. **Prerequisite(s):** CSC 10X or equivalent, MER 212, (ECE 222 or ECE 225), MER 262 & (MTH 130 or MTH 234). **Corequisite(s):** MER 322L **CC:** WAC

MER 331 - Fluid Mechanics 1

Course Units: 1.0 Analysis of fluid systems according to the control volume formulations of Newton's second law and the conservation laws of mass and energy. Both differential and integral analysis approaches are taught. Includes study of hydrostatics, dimensional analysis, boundary layers, Bernoulli's equation, head loss and piping systems, and lift and drag forces. Includes a laboratory component. **Prerequisite(s):** MER 231, MER 262 ,MTH 117 or IMP 121 **Corequisite(s):** MER 212 and MER 331L **CC:** WAC

MER 333 - Heat Transfer Analysis and Design

Course Units: 1.0 Study of the different modes of heat transfer through the development and application of rate equations for quantifying conduction, convection, and thermal radiation heat transfer. Theory and applications are reinforced and complemented by a laboratory component of the course. **Prerequisite(s):** MER 232 ,MER 331 and (MTH 130 or MTH 234) **Corequisite(s):** MER 333L **CC:** SET

- Elective****
- Elective****
- Elective****
- Elective****

Senior Year

MER 419 - Design of Mechanical Systems

Course Units: 1.0 A capstone design experience for the mechanics area of mechanical engineering program. Students work in teams on challenging design projects with special focus on the design of mechanical devices and systems. **Prerequisite(s):** MER 262 ,MER 311, MER 312 **CC:** SET, WAC

MER 439 - Design of Thermal/Fluid Systems

Course Units: 1.0 A capstone, project-oriented course in the thermal-fluids area of mechanical engineering that applies design techniques to the design of thermal fluid processes and systems. Students work in teams on projects that involve the design of piping systems, heat exchangers, thermodynamic cycles, and other thermal fluid systems.
Prerequisite(s): MER 232, MER 333 **CC:** WAC, WS

- Senior Experience****** (two courses/three courses)
- Elective****
- Elective****
- Elective****
- Elective****
- Elective****
- Elective****

Note(s):

1. * Students *must* declare their ME major prior to or during the sixth week of their first year spring term (prior to registering for courses for the following Fall). Students not declared as ME majors will likely not be admitted to 200-level ME courses.
2. ** An alternate mathematics sequence in the first year is possible depending on the math preparation of the student. Consult with your academic advisor.
3. *** ME students fulfill the computer science requirement by satisfactorily completing a CSC 100-level course.
4. **** The electives must be satisfied as follows:
    - General Education Program
    - 1 Math/Science Elective
      (This course is intended to count toward the ABET math/science requirements. This course must be a 100-level or above math/science course and count toward an Astronomy, Biological Sciences, Chemistry, Geosciences or Mathematics major. AP credit can be used to satisfy this requirement.)
    - 1 MER Technical Depth Elective (defined as any MER elective course that has at least one 200 level MER course prerequisite).

- 1 Engineering Technical Depth Elective (defined as any BME, CEE, ECE, ESC or MER course that has at least one 200 level engineering course prerequisite.

- Free Electives

5. **** The fall term of junior year is the recommended term for participation in a term abroad. Students should work closely with their academic advisor to develop the appropriate plan of study that will allow them to pursue this option.
6. ****** STA 104, STA 164, OR STA 264 may be substituted for MER 301.
7. ****** The Senior Experience is satisfied by completing (a) additional mechanical and engineering elective or (b) through participation on an engineering competition team or (c) through the senior project sequence. Students should work closely with their academic advisor or senior experience advisor to ensure that all course are met for each option.

Requirements for Honors:

In addition to the college wide Departmental Honors requirements enumerated in the Academic Catalog, candidates must (1) conduct themselves in a manner consistent with the Union College Academic Honor Code and the American Society for Mechanical Engineers (ASME) Code of Ethics; (2) maintain a minimum of 3.5 GPA in these ME courses: MER 101, MER 201, MER 212, MER 213, MER 214, MER 231, MER 232, MER 262 ,MER 301, MER 311, MER 312, MER 322, MER 331, MER 333, MER 419 and MER 439; (3) complete a senior project earning a grade of at least B+ in MER 497 and A- in MER 498 or participate on a competition team earning a grade of at least A- in MER 486H; (4) present the results of the senior project or competition team at the Steinmetz Symposium in poster or presentation form or other suitable venue approved by the Department; (5) participate in the ASME student chapter's oral presentation competition and represent the college at the National ASME meeting if selected and (6) complete and submit to the department administrative assistant the honors application form by the first week of the spring term and receive a vote of approval by the Department Faculty.

Course Selection Guidelines

Current Mechanical Engineering Major worksheets can be found in department web repositories. It is strongly suggested that students and their advisers consult with these worksheets prior to selecting courses (even during the first year). Please consult with a Mechanical Engineering faculty member if additional information or clarification is required.

Minimum grades in Prerequisite Courses: In order to qualify to take any mechanical engineering course, a minimum grade of C- must be earned in all mechanical engineering (MER) and mathematics (MTH) courses that are listed as prerequisites for the course. Mathematics courses with the IMP designation are excluded from this requirement.

Major Courses

(Prerequisites and co-requisites are listed for each of the major courses. Under extraordinary circumstances, a student may petition the instructor and Department Chair to take a prerequisite as a co-requisite for a major course.)

Elective Courses

These may be taken to satisfy the engineering technical depth or free elective requirements. Consult the Mechanical Engineering Department Chair and course listings for additional MER, BME, CEE, ESC, CSC, and ECE courses that satisfy the engineering technical depth elective requirement. An engineering technical depth elective requires a 200-level or higher engineering course as a prerequisite. MER 485 , MER 486 , MER 490 , MER 491 , MER 492 , MER

493 , MER 497 , MER 498 , and MER 499 may not be counted as engineering technical depth electives. Non-MER courses require Mechanical Engineering Department Chair approval.

Modern Languages and Literatures

Chair: Associate Professor M. Ricci Bell
Faculty: Professors C. Batson, K. Bidoshi, M. Ferry, W. Garcia, C. Henseler, D. Mosquera, C. Ndiaye, J. Ueno; Associate Professors M. Chilcoat, S. Mueller, E. Nelson-Mukherjee, Z. Zhang; Senior Lecturers M. Osuna, A. Pease; Assistant Professor S. Yi; Visiting Assistant Professors M. Dawson, R. Pasquer, M. Mayna
Administration: A. Sartiaux (Director of Language Center)
Staff: F. Li (Administrative Assistant)

All students who begin the study of a new foreign language at Union College are encouraged to pursue it for at least three terms. Students who take 100-level courses in more than one foreign language will receive credit for the second 100-level course only upon completion of the 101-level course in at least one of the two languages. Students continuing a foreign language previously studied will be assigned to the proper course level by the department. Placement will be made in consultation with the Chair and faculty members of the department on the basis of the secondary school record and testing scores. Students may construct full majors or interdepartmental majors in Chinese, French and Francophone, German and Spanish and Hispanic Studies. Students in Japanese, and Russian have the option of an interdepartmental major with any other field. Minors are possible in Chinese, French, German, Japanese, Russian, and Spanish. Students of Chinese and Japanese have the option of the major or interdepartmental major in Asian Studies. Introductory courses are also offered in Arabic, Hebrew, Italian and Portuguese.

Requirements in All Languages

Requirements for Honors:

- A candidate for honors shall have an index in Departmental courses of not less than 3.5 and an overall cumulative index of not less than 3.3.
- The candidate shall have achieved a grade of "A" in three courses in the department, with at least one at the 300-level or higher.
- *Additional stipulations for full and interdepartmental majors in French, German, and Spanish*. **Majors** shall have achieved a grade of at least "A-" in two 400-level courses (**not including FRN 489 , GER 489 , SPN 489). Interdepartmental majors** shall have achieved a grade of at least "A-" in no fewer than three courses at the 300-level or higher, with at least one at the 400-level (**not including FRN 489, GER 489, SPN 489**).
- *Additional stipulations for interdepartmental majors in Chinese, Japanese, and Russian*. **Interdepartmental majors** shall have achieved a grade of at least "A-" in no fewer than three courses at the 300-level or higher, and one in an MLT course.
- For the **major**, the honors candidate shall complete a project of a literary and/or cultural nature. For the **interdisciplinary major,** the candidate may elect to complete a thesis/project relating the candidate's chosen disciplines. **In all cases**, the topic shall have received prior approval from the faculty advisor.
- For the **major**, the honors project is expected to be written in the foreign language studied. For the **interdisciplinary major**, the honors project should be written in the language deemed appropriate by the faculty advisor. For the interdisciplinary major in *Chinese and Japanese*, the project shall normally be written in English.
- The honors project shall have been awarded a grade no lower than "A-."
- When declaring candidacy for honors, a student shall write a statement outlining the nature and scope of the project and present it to the faculty member chosen to supervise the honors project, as well as to the Chair of the Department. The candidate's proposal must meet with the approval of both faculty members. This stipulation is waived when the honors project is written under the direct supervision of a Departmental faculty member in a class setting.

Requirement for taking a course without its prerequisites

In order to be placed at the proper level for their first language course at Union or to be assigned to any other course without having completed its prerequisite, students should contact the Departmental office for an appointment with the appropriate professor to get a signed permission slip or petition on the necessary waiver.

Course Selection Guidelines

Students should be aware that many of our language programs offer the 100 class (Basic 1) only in the Fall term.

Students with previous experience in a language should come to the Department office to make an appointment to see a professor in the appropriate language for proper placement. Our MLT courses do not require such placement, as they are taught in English.

Courses in Modern Literature, Culture, and Cinema in Translation (Taught in English)
Faculty in the Department of Modern Languages & Literatures offer a variety of courses on works of literature, culture, cinema, and media that have been translated into English. "MLT" courses allow English-speaking students to engage with texts and other cultural artifacts from around the world to help them to develop the awareness of cultural diversity that is needed to be a global citizen in the twenty-first century.

Chinese (ID), B.A.

Requirements for the Interdepartmental Major in Chinese:

A minimum of seven courses beyond the 101-level, including two courses on the 300-level and one MLT course, or a third course at the 300-level. 4 courses beyond the 101-level are required if combined with participation in a Union Term Abroad to China.

Chinese Minor

Requirements for the Minor in Chinese:

A minimum of 6 courses at the 101-level or above. For students not participating in the Term Abroad in China, one of those six courses should be an MLT course. For students participating in the Term Abroad in China, students may complete their minor in Chinese with 3 additional courses (which can include 100). When selecting courses for the term abroad, students should select courses directly related to the host culture, with the approval of the department chair.

Chinese, B.A.

Requirements for the Major in Chinese:

A minimum of 10 courses at the 101-level and above, including three 300 level, two 400 level, and 489 (Senior Project). Students have the option of taking one China-related MLT course for Chinese credit in place of one 400-level course. Majors are expected to participate on the China Term Abroad program and are encouraged to improve their language skills by attending the weekly Chinese Table and participating in other extracurricular activities. In addition, majors are urged to take other courses related to Chinese culture and history in academic fields such as history, philosophy, anthropology, art history, and political science.

French and Francophone Studies (ID), B.A.

Requirements for the Interdepartmental Major in French and Francophone Studies:

A minimum of seven courses at the 101-level and above, including two 400-level courses and either FRN 489 or a project that integrates the two disciplines.

French and Francophone Studies Minor

Requirements for the Minor in French:

A minimum of six courses, including two 300-level courses.

French and Francophone Studies, B.A.

Requirements for the Major in French and Francophone Studies:

A minimum of 10 courses at the 101-level and above, including two 300-level courses, three 400-level courses, and FRN 489 (Senior Project). Participation in a Union Term Abroad program is normally expected. Courses listed under "Literature in Translation" may or may not count toward the major, interdepartmental major, or minor. One term of related history, one term of philosophy, and one term of English literature are strongly recommended, as well as relevant courses in art history in the major.

German Studies (ID), B.A.

Requirements for the Interdepartmental Major in German Studies:

A minimum of seven courses at the 101-level and above, including two courses at the 300 level and one course at the 400 level if the senior project course GER 489 in German is chosen; or it can include, in addition to two 300 level courses, two courses at the 400 level if the thesis (with a considerable German component) is written in the second field. Students have the option of taking one MLT course (Literature in Translation) for German credit. **Students may also take one of these two designated cross-listed courses toward the major: HST258 or AMU284.** Interdepartmental majors are urged to take the Term Abroad and are encouraged to improve their language skills **by attending the weekly German Table and participating in German Club and other extracurricular activities**.

German Studies Minor

Requirements for the Minor in German Studies:

A minimum of six courses, including at least two 300-level courses, only one of which may be either GER 300T or the MLT for German credit.

German Studies, B.A.

Requirements for the Major in German Studies:

A minimum of 10 courses at the 101-level or above, including three 300 level, and two 400 level, and GER 489 (Senior Project). Majors are normally expected to take one Term Abroad and are encouraged to improve their language skills **by attending the weekly German Table and participating in German Club and other extracurricular activities**. Students have the option of taking one MLT course (Literature in Translation) for German credit. **Students may also take one of these two designated cross-listed courses toward the major: HST258 or AMU284.** In addition, majors are urged to take other courses related to German culture and history in other academic fields such as English, history, philosophy, music, art history, and political science.

Japanese (ID), B.A.

Requirements for the Interdepartmental Major in Japanese:

A minimum of seven courses at the 101-level and above, including two courses on the 300 or 400-level and one MLT course, or a third course at the 300-level. 4 courses at the 101-level and above are required if combined with participation in a Union Term Abroad to Japan.

Japanese Minor

Requirements for the Minor in Japanese:

A minimum of 6 courses at the 101-level or above. For students not participating in the Term Abroad in Japan, one of those six courses should be an MLT (Japanese) course. For students participating in the Term Abroad in Japan, students may complete their minor in Japanese with 3 additional courses (which can include 100). When selecting courses for the term abroad, students should select courses directly related to the host culture, with the approval of the department chair.

Russian (ID), B.A.

Requirements for the Interdepartmental Major in Russian

A minimum of seven courses at the 101-level and above, including two courses on the 300 or 400 level and one MLT course, or a third course at the 300-level. 4 courses at the 101-level and above are required if combined with participation in a Union Term Abroad to Armenia.

Russian Minor

A minimum of 6 courses at the 101-level or above. For students not participating in the Term Abroad in Russia, one of those six courses should be an MLT (Russian focus) course. For students participating in the Study Abroad in Armenia, students may complete their minor in Russian with 3 additional courses (which can include 100). When selecting courses for the term abroad, students should select courses directly related to the host culture, with the approval of the department chair.

Spanish and Hispanic Studies (ID), B.A.

Requirements for the Interdepartmental Major in Spanish and Hispanic Studies:

A minimum of 7 courses, including two classes in the 250-299 sequence; two classes in the 300 sequence; two classes in the 400-level sequence (one of which is either a WS or 489 (Honors); and one elective course at the discretion of the student. This elective class may consist of any additional Spanish course, a LACS-designated course, a Spanish program MLT-designated course (taught in English), or a mini-term to a Spanish speaking country. We highly encourage students to go on a mini or full term to a Spanish speaking country (all coursework on terms abroad counts toward the major). Students may consult their Spanish faculty advisors for additional options.

Students who seek and qualify for departmental honors must take at least one 400-level class and SPN 489 (Honors Senior Project), which will count as one 400-level course with WS designation. ID majors seeking honors must fulfill honors requirements in both departments/programs.

These requirements apply starting in Fall 2023. Previous requirements for the major, ID major, and minor in SPN will be applicable until Spring 2026. Students can opt out and fulfill the new requirements if desired. Similarly, SPN 202 and SPN 203 will be counted as SPN 250-299 courses until Spring 2026.

Spanish and Hispanic Studies, B.A.

Requirements for the Major in Spanish and Hispanic Studies:

A minimum of 10 courses, including two classes in the 250-299 sequence; two classes in the 300 sequence; three classes in the 400-level sequence (one of which is either a WS or 489 (Honors); and one elective course at the discretion of the student. This elective class may consist of any additional Spanish course, a LACS-designated course, a Spanish program MLT-designated course (taught in English), or a mini-term to a Spanish speaking country. We highly encourage students to go on a mini or full term to a Spanish speaking country (all coursework on terms abroad counts toward the major). Students may consult their Spanish faculty advisors for additional options.

These requirements apply starting in Fall 2023. Previous requirements for the major, ID major, and minor in SPN will be applicable until Spring 2026. Students can opt out and fulfill the new requirements if desired. Similarly, SPN 202 and SPN 203 will be counted as SPN 250-299 courses until Spring 2026.

Spanish Minor

Requirements for the Minor in Spanish:

A minimum of six courses, including up to two language courses (SPN 100, SPN 101, SPN 102, SPN 200, SPN 201); two classes in the 250-299 sequence; two classes in the 300 sequence, or one 300-level and one course at the discretion of the student. This elective class may consist of an additional SPN 300 or 400 level course, it may consist of a LACS-designated course, or a Spanish program MLT designated course (taught in English), or a mini-term to a Spanish speaking country.

These requirements apply starting in Fall 2023. Previous requirements for the major, ID major, and minor in SPN will be applicable until Spring 2026. Students can opt out and fulfill the new requirements if desired. Similarly, SPN 202 and SPN 203 will be counted as SPN 250-299 courses until Spring 2026.

Music

Chair: Professor J. Matsue
Faculty: Professors D. McMullen, T. Olsen; Assistant Professor C. Chandler; Lecturer, Director of Music Performance E.J. Byun
Staff: C. Jones (Office Assistant), V. Rotondi (Program Administrative Coordinator)

Ensembles and Lessons

Students are invited to participate in a variety of faculty-led ensembles and/or take private lessons. A list of approved instrumental and vocal instructors is available from the Director of Music Performance. There is no fee for participation in the ensembles; music lessons are paid for separately on an individual basis. To gain transcript recognition for participation in these activities, students must register with the Registrar early in the term and achieve a passing grade from the teacher, director, or conductor. Requests to register for practicum transcript recognition after the drop-add period will not be honored. Each full music credit is accumulated from three previous passing grades in the same practicum (AMU 010, AMU 012, AMU 014, AMU 015, AMU 016 , AMU 017, or AMU 018). There are no limits on how many practicum courses can appear on the student's transcript. However, at most two of these credits can be used towards graduation. Full music majors and ID majors must accumulate at least two years of practicum credit (in one (or more) faculty-led ensemble(s)); music minors must accumulate at least one year of practicum credit in a faculty-led ensemble.

Global and Popular Musics Minor

Requirements for the Minor

Students may complete both the Music major or minor, or the Music Technology minor and the Global and Popular Musics minor (please see Professor Matsue for further clarification).

The Global and Popular Musics minor comprises Six courses, including:

AMU 220 - Mapping Musical Lives: Ethnography of Performing Arts

Course Units: 1.0 This seminar explores the relationship between music and culture through live performance, discussion, video and audio, and workshops in a variety of world music areas. Students will also consider how one conducts research on performing arts, culminating in a focused project on music-making in the community. Students thus will encounter diverse peoples and their musical practices in cross-cultural comparison while also exploring research methodology through their own work. **Cross-Listed:** ANT 274 **CC:** LCC, HUM, JCHF, JSPE, WAC-R **ISP:** REE

or

AMU 202 - Musical Thinking: World and Pop

Course Units: 1.0 This course will examine music traditions outside the canon of Western classical music, including American folk, jazz and popular music as well as traditional and popular music from around the world. In order to better understand the theory and practice of these music's, students will pursue topics including the dichotomy between oral tradition and written notation; various ways of organizing pitch, rhythm, and meter; and the process of transcription. **Prerequisite(s):** AMU 100 or AMU 101 or permission of the instructor. **CC:** HUM, LCC

and

AMU 101 - Music Theory: Materials and Design I

Course Units: 1.0 This course is an introduction to concepts in music theory that enable musicians to analyze, compose, perform, and think more critically about the elements of music. Through academic inquiry and creative application, students will develop a deeper understanding of the materials that underpin music, including melody, harmony, voice leading, rhythm, texture, phrasing, and form. Students will gain insight into how composers design and construct music and then apply those techniques to their own composition assignments and projects. **Prerequisite(s):** Ability to read music or permission of the instructor. **CC:** HUM

ANT 110 - Introduction to Cultural Anthropology

Course Units: 1.0 The basic concepts, methodology, and findings of cultural anthropology. Examines the similarities and diversity of human societies through in-depth case studies and cross-cultural comparisons. **CC:** LCC, SOCS, JCHF, JSPE

Two area courses (one of which may be chosen from outside of the Music Department; see below):

AMU 120 - Making Music, Shaping Selves: Introduction to World Music

Course Units: 1.0 Introduces music from various world areas including Africa, Latin America, Asia, and Europe through live performance, lecture, video and audio. Students will increase familiarity with a wide range of musical styles while also exploring the relationship between music, identity and society. **Cross-Listed:** ANT 148 **CC:** LCC, HUM

AMU 131 - Music of Black America

Course Units: 1.0 Black music in America from its African beginnings to present-day pop styles, approached through live performance, lecture, video, and sound recordings. Special emphasis on gospel, blues, jazz, and rap. **Prereq/Corequisite(s):** Not open to students who have taken AMU 132. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AFR, AMS

AMU 132 - The History of Jazz

Course Units: 1.0 A study of the important personalities and trends in the evolution of jazz, approached through reading, video and sound recordings, and live performance. **Prereq/Corequisite(s):** Not open to students who have taken AMU 131. **CC:** LCC, HUM **ISP:** AFR, AMS

AMU 133 - Music of Latin America

Course Units: 1.0 Latin American music-cultures approached through live performance, lecture, video, and audio. Survey samples from folk, popular, and classical traditions, with special emphasis on the musics of Cuba and Brazil. **CC:** LCC, HUM **ISP:** AFR, LAS

AMU 134 - Music and Culture of Africa

Course Units: 1.0 Through an examination of traditional and popular music from across the continent, students will gain a better understanding of the integral role played by music in African culture. **CC:** LCC, HUM, JCAD, JCHF **ISP:** AFR

AMU 221 - From Rhythm and Blues to Radiohead: The History of Rock & Roll

Course Units: 1.0 Explores the historical development of Anglo-American rock-and-roll through lecture, video and sound recordings. This course will rely heavily on film, with an accompanying series featuring documentaries, concert films, musicals and more. Students will gain a greater understanding of the socio-cultural contexts that informed stylistic change, as well as consider the continued relevance of rock today. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, JCHF, JCAD, WAC **ISP:** AMS, GSWS

AMU 223 - Global Hip Hop

Course Units: 1 Hip hop has grown from its late 1970s NYC roots to become a vehicle for self-expression around the globe. After introductory topics including the basics of music, an overview of the music industry, and the roots of hip hop, the course will examine case studies in global hip hop culture. **CC:** HUM, WAC-R, JCAD, JCHF **ISP:** AFR

AMU 225 - Music as Activism

Course Units: 1 From Green Day's iconic American Idiot (2004) to the strumming of Middle Eastern lutes in Afghani refugee camps-music is an integral means of expressing individual and collective identity, critiquing injustice, and inspiring action. This course explores what forms such activism take and how music and the arts increase awareness of real social and environmental problems and potentially help resolve conflicts. Both through theoretical arguments and concrete case studies, we will see that music-and the individuals who make it-are able to enact real positive social change. **CC:** HUM, JCHF, JSPE, WAC-R

AMU 230 - Musical Theater & Opera Scenes Workshop

Course Units: 1.0 This class aims to help students discover their potential for singing, acting, and dancing through the performance of scenes from the opera and musical theater literature. Special emphasis will be given to the improvement of sight-reading. Through a combination of lecture and hands-on performance, students will also learn to understand the basics of voice types, vocal technique, and other performance-related issues in the field. Guest speakers and instructors will be invited to share their experiences with students to further their understanding of the vocal performance industry. **CC:** HUM **ISP:** AMS

AMU 232 - Jazz Workshop

Course Units: 1.0 Students will perform, analyze, and compose music written in jazz idioms; students will develop skills in improvisation. **CC:** HUM

AMU 233 - Japanese Drumming Workshop

Course Units: 1.0 This course introduces Japanese drumming, exploring its origins and subsequent development as a national art form following WWII, and then its ultimate spread globally as a voice of Asian-American activism. The course emphasizes performance on the drums and culminates in a final concert and performance project. No previous musical experience is required. **CC:** LCC, HUM, JCAD, JCHF, JSPE **ISP:** AIS, GSW

AMU 234 - Balinese Gamelan Workshop

Course Units: 1.0 This course introduces Balinese music and culture, exploring the importance of music, dance, and religion in the everyday life of Balinese people. The course emphasizes performance of Balinese gong kebyar (an orchestral form featuring xylophones, gongs, drums, and cymbals) and culminates in a final concert and performance protest. No previous musical experience is required. **CC:** LCC, HUM **ISP:** AIS

AMU 235 - Latin Percussion Workshop

Course Units: 1.0 The goal of this course is to give students an in-depth understanding of Afro-Cuban and Afro-Brazilian music through studying genres (rumba, son, mambo, salsa, comparsa, samba, forro) from inside the percussion section. In addition to ensemble work, students will research and transcribe Latin music styles. The course will culminate in a public performance/presentation at the end of the term. Entry to the course by audition; previous instrumental experience desirable but not required. **CC:** LCC, JCAD, JCHF **ISP:** AFR, LAS

AMU 245 - Sonic Storytelling: Scoring for Film and Media

Course Units: 1 AMU 245 is an introduction to the artistic and technical foundations of scoring music for film and media. The course is designed to give students a set of skills to conceptualize, synchronize, and compose music for moving images. We will have discussions centering on the relationships between music, sound, narrative, and aesthetics and workshops demonstrating the hardware and software tools available for scoring. **Prerequisite(s):** AMU 101 or AMU 140 **CC:** HUM **ISP:** FLM

AMU 306 - The Evolution of Popular Song

Course Units: 1.0 From minstrelsy and vaudeville through Tin Pan Alley, Motown, the Beatles, Burt Bacharach, Billy Joel, and Taylor Swift, this course will examine the creation, performance, transmission, and reception of popular song. In addition to analyzing lyrical/musical content as well as historical context, students will compose words and music in the styles of established master songwriters. **Prerequisite(s):** AMU 101 or permission of the instructor. **CC:** HUM

AMU 307 - The Art and Music of Radiohead

Course Units: 1.0 Course Units: 1.0 This course focuses on the music and art of seminal rock group Radiohead. Formed in the 1980s in Oxfordshire, UK, Radiohead has released nine critically acclaimed studio albums and more than 40 music videos, topping thecharts for decades, and rivaling The Beatles for a top spot in the pantheon of British rock legends. They are widely respected not only for their musical innovation, involving creative modality and rhythmic organization but their ecological mindfulness, political edginess and industry changing approaches to the production of popular music, ever critical of consumer capitalism. This combination has allowed the group to maintain creative autonomy and authenticity, while garnering worldwide recognitionand commercial success. The group's emergence from British synth-pop and evolution to contemporary icons will be explored
through reading, listening, musical analysis, and video. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, GCHF, GCAD, GLIT, WAC

AMU 320 - Encounters with East Asian Music Cultures

Course Units: 1.0 Through live performance, discussion, and composition, this course explores key characteristics of East Asian Music Cultures. Particular attention is paid to the processes of cultural exchange between China, Korea, Japan and the rest of the world that have resulted in the rich breadth of performance traditions expressed today. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AIS, GSW

AMU 325 - Music, Community Engagement, and Sustainable Instruments: A Service-Learning Course

Course Units: 1 Music, Civic Engagement, and Sustainable Instruments is a service learning course that allows students to engage with the local Schenectady community by partnering with the Mont Pleasant Middle School 21st Century Afterschool Program; explore sustainable design, such as upcycling found objects into new sound producing instruments or related artistic objects; and collectively explore and expand your own ability to enact positive social change through your academic pursuits and beyond. **CC:** HUM, GCHF, GCAD, GSPE

GPM 354T - WMC Balinese Performing Arts Mini-term

Course Units: 1.0 This mini-term focuses on the study of the performing Arts of Bali. Students will have daily group instruction with Masters Performers of gamelan (the Balinese orchestra of gongs and xylophones) and dance, as well as additional lessons in an art form one's choosing (e.g. painting, drumming, mask making, etc.). This instruction will culminate in a final performance. Students will also visit many important artistic and ritual locations, attend professional shows and meet with local Balinese people in a variety of contexts. No previous experience is required. **CC:** LCC

COURSES OFFERED OUTSIDE OF THE MUSIC DEPARTMENT (one of which maybe be used as an elective):

ATH 348 - Global Performance Tradition

Course Units: 1.0 This course is a survey of non western theatrical and performance forms, engaging with practices and traditions from a global perspective. We will examine a variety of traditions likely including
Japanese Noh, Kyogen, Kabuki, and Bunraku; Chinese Xiqu (Chinese opera), Indonesian Wayang and Topeng, Indian Kathakali dance-drama, Persian Ta'ziyeh, Arabian shadow puppetry, Native American Indian Potlatch ceremonies, West African Griot (praise singing), and Caribbean carnival performance and Latin American protest theater. To conduct our examinations of these diverse traditions, we will read firsthand accounts, critical and theoretical literature, and theatrical texts, and interrogate the intersections between these performance traditions and social culture, including both political structures and religious ceremony and ritual. **CC:** LCC, HUL, JCHF, JLIT, WAC, WAC-R **ISP:** AIS, REL

PSC 237 - Music and Politics

Course Units: 1.0 This class explores the multiple relationships between music and politics with a specific focus on the following dimensions: (1) the use of music as a lens to perceive the world, to frame injustices, to inform political discourse, to raise consciousness, and to mobilize public opinion; (2) the political context in which critically significant music is produced; (3) biographical details of artists that bring understanding to the art they produce; (4) the impact of class, race, ethnicity, and gender on music; (5) the interpretation of political messages found in music; and (6) the intentional and unintentional political consequences of popular music. **CC:** SOCS **ISP:** AMS, LAS

PSC 374 - Pop Culture & Rock Music in the 1970s

Course Units: 1 The 1970s was a remarkable decade of transition and turbulence. Stagflation, the oil crisis, the fall of Saigon, de?tente, Watergate, Three Mile Island, the women's movement, left-wing terrorism, urban decay, the rising gay movement, and the looming dread of ecological disaster were just a few of the trendlines. The writer Tom Wolfe dubbed the 70's the "Me decade," by which he meant the transition away from 1960s communitarianism and New Deal-style politics and towards an individualist ethos of hedonism, self-realization, and personal freedom. Rock music, which was the dominant musical style, reflected and promoted this culture shift, emphasizing a libertine attitude and downplaying the social consciousness, egalitarianism, and anti-capitalist motifs that prevailed among the youth in the

60s. This course surveys the cultural, economic, and political landscape of the decade through the prism of rock music, which reached a zenith of aesthetic creativity, genre-expansion, and commercial success. **CC:** SOCS

One-year of practicum credit in a faculty-led ensemble

And a capstone experience:

GPM 490 - Global and Popular Musics

Course Units: 1.0

Interdepartmental (ID) and Organizing Theme (OT) Major options

Students interested in pursuing further study in this area may complete an interdepartmental major (ID) in Music and Anthropology, or consider designing an Organizing Theme major (OT).

Courses associated with Global and Popular Musics

Several departments and programs contribute towards the program in Global and Popular Musics. Associated courses include:

ANT 110 - Introduction to Cultural Anthropology

Course Units: 1.0 The basic concepts, methodology, and findings of cultural anthropology. Examines the similarities and diversity of human societies through in-depth case studies and cross-cultural comparisons. **CC:** LCC, SOCS, JCHF, JSPE

ATH 348 - Global Performance Tradition

Course Units: 1.0 This course is a survey of non western theatrical and performance forms, engaging with practices and traditions from a global perspective. We will examine a variety of traditions likely including
Japanese Noh, Kyogen, Kabuki, and Bunraku; Chinese Xiqu (Chinese opera), Indonesian Wayang and Topeng, Indian Kathakali dance-drama, Persian Ta'ziyeh, Arabian shadow puppetry, Native American Indian Potlatch ceremonies, West African Griot (praise singing), and Caribbean carnival performance and Latin American protest theater. To conduct our examinations of these diverse traditions, we will read firsthand accounts, critical and theoretical literature, and theatrical texts, and interrogate the intersections between these performance traditions and social culture, including both political structures and religious ceremony and ritual. **CC:** LCC, HUL, JCHF, JLIT, WAC, WAC-R **ISP:** AIS, REL

PSC 237 - Music and Politics

Course Units: 1.0 This class explores the multiple relationships between music and politics with a specific focus on the following dimensions: (1) the use of music as a lens to perceive the world, to frame injustices, to inform political discourse, to raise consciousness, and to mobilize public opinion; (2) the political context in which critically significant music is produced; (3) biographical details of artists that bring understanding to the art they produce; (4) the impact of class, race, ethnicity, and gender on music; (5) the interpretation of political messages found in music; and (6) the intentional and unintentional political consequences of popular music. **CC:** SOCS **ISP:** AMS, LAS

PSC 374 - Pop Culture & Rock Music in the 1970s

Course Units: 1 The 1970s was a remarkable decade of transition and turbulence. Stagflation, the oil crisis, the fall of Saigon, de?tente, Watergate, Three Mile Island, the women's movement, left-wing terrorism, urban decay, the rising gay movement, and the looming dread of ecological disaster were just a few of the trendlines. The writer Tom Wolfe dubbed the 70's the "Me decade," by which he meant the transition away from 1960s communitarianism and New Deal-style politics and towards an individualist ethos of hedonism, self-realization, and personal freedom. Rock music, which was the dominant musical style, reflected and promoted this culture shift, emphasizing a libertine attitude and downplaying the social consciousness, egalitarianism, and anti-capitalist motifs that prevailed among the youth in the 60s. This course surveys the cultural, economic, and political landscape of the decade through the prism of rock music, which reached a zenith of aesthetic creativity, genre-expansion, and commercial success. **CC:** SOCS

Music (ID), B.A.

Requirements for the Interdepartmental Major through Class of 2025 :

Eight courses

Theory Courses

AMU 101 - Music Theory: Materials and Design I

Course Units: 1.0 This course is an introduction to concepts in music theory that enable musicians to analyze, compose, perform, and think more critically about the elements of music. Through academic inquiry and creative application, students will develop a deeper understanding of the materials that underpin music, including melody, harmony, voice leading, rhythm, texture, phrasing, and form. Students will gain insight into how composers design and construct music and then apply those techniques to their own composition assignments and projects. **Prerequisite(s):** Ability to read music or permission of the instructor. **CC:** HUM

AMU 201 - Music Theory: Materials and Design II

Course Units: AMU 201 delves deeper into melody, harmony, and voice leading, with a particular focus on modulation and chromaticism. This course touches on a broad spectrum of topics, including melodic phrasing, tonicization and modulation, chromatic voice leading, and an expanded harmonic vocabulary. Through the analysis of classical, jazz, and popular music, this course encourages students to explore and understand the application of these concepts in various musical genres. **Prerequisite(s):** AMU 101 or permission from the instructor. **CC:** HUM

Two music history courses

Chosen from below:

AMU 212 - Bach, Handel, and their Predecessors

Course Units: 1.0 This course is a study of music composed between about 1600 and 1750. Among the topics that we explore are: recently discovered compositions by underrepresented figures such as Manuel del Surmaya of Mexico; works influenced by architecture; connections between various styles of opera and the modern-day musical; the impact of dance rhythms on vocal and instrumental music; and the role of improvisation on the one hand and strict counterpoint on the other in the development of music from the seventeenth and early eighteenth centuries. **CC:** HUM, HUL, LCC, WAC-R, JCAD, JCHF, JLIT, **ISP:** REL

AMU 213 - Haydn, Mozart and Beethoven

Course Units: 1.0 Vienna was the center of European art music from the late eighteenth century through the early nineteenth century. This course examines music by Haydn, Mozart, Beethoven, and underrepresented composers such as Joseph Bologne. A thread throughout the course is a discussion about class struggles as seen through the lives of the composers, as well as through a close examination of the classic opera The Marriage of Figaro. Students come to an understanding of Vienna at one of the city's greatest musical heights. **CC:** HUM, JCAD, JCHF, JLIT, WAC

AMU 214 - Romanticism

Course Units: 1.0 The nineteenth century witnessed the development of countless individual musical styles, as opposed to the more homogeneous sounds of previous generations. Through listening exercises, studies of texts and music, and historical documents, students learn to distinguish characteristics of music written by composers such as Chopin, Schubert, Clara and Robert Schumann, Felix and Fanny Mendelssohn, Bizet, Verdi, Wagner, Brahms, Ethel Smythe, Amy Beach, Coleridge-Taylor, Gottschalk, and others. **CC:** HUL, JCAD, JCHF, WAC **ISP:** REE

AMU 215 - Music in the 20th & 21st Centuries

Course Units: 1.0 The study of significant styles and developments in the music of the last hundred years (both "classical" and popular), approached through analysis, performance, and composition. **Prerequisite(s):** AMU 101or permission of the instructor. **CC:** HUM **ISP:** REE

AMU 340 - Early Music Seminar: Music of the Middle Ages and Renaissance

Course Units: 1.0 While distant in time, music of the Middle Ages and Renaissance resonates with modern times. Students learn how court musicians, monks, jongleurs, and others dealt with topics that still matter today - from love to war - only in different musical languages. Through individual analyses of texts and music, active listening exercises, classroom discussions, papers, performances, and projects, students explore the lives of people living between the ninth through the sixteenth centuries. **CC:** HUL, HUM, WAC, JCAD, JCHF, JLIT **ISP:** REL

A world music course

AMU 202 - Musical Thinking: World and Pop

Course Units: 1.0 This course will examine music traditions outside the canon of Western classical music, including American folk, jazz and popular music as well as traditional and popular music from around the world. In order to better understand the theory and practice of these music's, students will pursue topics including the dichotomy between oral tradition and written notation; various ways of organizing pitch, rhythm, and meter; and the process of transcription. **Prerequisite(s):** AMU 100 or AMU 101 or permission of the instructor. **CC:** HUM, LCC

Or

AMU 220 - Mapping Musical Lives: Ethnography of Performing Arts

Course Units: 1.0 This seminar explores the relationship between music and culture through live performance, discussion, video and audio, and workshops in a variety of world music areas. Students will also consider how one conducts research on performing arts, culminating in a focused project on music-making in the community. Students thus will encounter diverse peoples and their musical practices in cross-cultural comparison while also exploring research methodology through their own work. **Cross-Listed:** ANT 274 **CC:** LCC, HUM, JCHF, JSPE, WAC-R **ISP:** REE

Two music electives

To be chosen in consultation with your advisor.

One term senior project

AMU 497 - Music One Term Senior Project

Course Units: 1.0

Two years of practicum credit in faculty-led ensemble

Requirements for the Interdepartmental Major for the Class of 2026 Onwards

Eight courses

TWO COURSES IN MUSICAL LITERACY (ML)

AMU 101 - Music Theory: Materials and Design I

Course Units: 1.0 This course is an introduction to concepts in music theory that enable musicians to analyze, compose, perform, and think more critically about the elements of music. Through academic inquiry and creative application, students will develop a deeper understanding of the materials that underpin music, including melody, harmony, voice leading, rhythm, texture, phrasing, and form. Students will gain insight into how composers design and construct music and then apply those techniques to their own composition assignments and projects. **Prerequisite(s):** Ability to read music or permission of the instructor. **CC:** HUM

AMU 201 - Music Theory: Materials and Design II

Course Units: AMU 201 delves deeper into melody, harmony, and voice leading, with a particular focus on modulation and chromaticism. This course touches on a broad spectrum of topics, including melodic phrasing, tonicization and modulation, chromatic voice leading, and an expanded harmonic vocabulary. Through the analysis of classical, jazz, and popular music, this course encourages students to explore and understand the application of these concepts in various musical genres. **Prerequisite(s):** AMU 101 or permission from the instructor. **CC:** HUM

TWO HISTORICAL AND CULTURAL CONTEXT COURSES (HCC)

Chosen from two categories:

- Historical musicology
- Global and popular musics

To be chosen from a list of approved courses.

At least one must be outside of the primary area.

Historical Musicology

AMU 212 - Bach, Handel, and their Predecessors

Course Units: 1.0 This course is a study of music composed between about 1600 and 1750. Among the topics that we explore are: recently discovered compositions by underrepresented figures such as Manuel del Surmaya of Mexico; works influenced by architecture; connections between various styles of opera and the modern-day musical; the impact of dance rhythms on vocal and instrumental music; and the role of improvisation on the one hand and strict counterpoint on the other in the development of music from the seventeenth and early eighteenth centuries. **CC:** HUM, HUL, LCC, WAC-R, JCAD, JCHF, JLIT, **ISP:** REL

AMU 213 - Haydn, Mozart and Beethoven

Course Units: 1.0 Vienna was the center of European art music from the late eighteenth century through the early nineteenth century. This course examines music by Haydn, Mozart, Beethoven, and underrepresented composers such as Joseph Bologne. A thread throughout the course is a discussion about class struggles as seen through the lives of the composers, as well as through a close examination of the classic opera The Marriage of Figaro. Students come to an understanding of Vienna at one of the city's greatest musical heights. **CC:** HUM, JCAD, JCHF, JLIT, WAC

AMU 214 - Romanticism

Course Units: 1.0 The nineteenth century witnessed the development of countless individual musical styles, as opposed to the more homogeneous sounds of previous generations. Through listening exercises, studies of texts and music, and historical documents, students learn to distinguish characteristics of music written by composers such as Chopin, Schubert, Clara and Robert Schumann, Felix and Fanny Mendelssohn, Bizet, Verdi, Wagner, Brahms, Ethel Smythe, Amy Beach, Coleridge-Taylor, Gottschalk, and others. **CC:** HUL, JCAD, JCHF, WAC **ISP:** REE

AMU 215 - Music in the 20th & 21st Centuries

Course Units: 1.0 The study of significant styles and developments in the music of the last hundred years (both "classical" and popular), approached through analysis, performance, and composition. **Prerequisite(s):** AMU 101or permission of the instructor. **CC:** HUM **ISP:** REE

AMU 340 - Early Music Seminar: Music of the Middle Ages and Renaissance

Course Units: 1.0 While distant in time, music of the Middle Ages and Renaissance resonates with modern times. Students learn how court musicians, monks, jongleurs, and others dealt with topics that still matter today - from love to war - only in different musical languages. Through individual analyses of texts and music, active listening exercises, classroom discussions, papers, performances, and projects, students explore the lives of people living between the ninth through the sixteenth centuries. **CC:** HUL, HUM, WAC, JCAD, JCHF, JLIT **ISP:** REL

Global and Popular Musics

AMU 120 - Making Music, Shaping Selves: Introduction to World Music

Course Units: 1.0 Introduces music from various world areas including Africa, Latin America, Asia, and Europe through live performance, lecture, video and audio. Students will increase familiarity with a wide range of musical styles while also exploring the relationship between music, identity and society. **Cross-Listed:** ANT 148 **CC:** LCC, HUM

AMU 131 - Music of Black America

Course Units: 1.0 Black music in America from its African beginnings to present-day pop styles, approached through live performance, lecture, video, and sound recordings. Special emphasis on gospel, blues, jazz, and rap. **Prereq/Corequisite(s):** Not open to students who have taken AMU 132. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AFR, AMS

AMU 132 - The History of Jazz

Course Units: 1.0 A study of the important personalities and trends in the evolution of jazz, approached through reading, video and sound recordings, and live performance. **Prereq/Corequisite(s):** Not open to students who have taken AMU 131. **CC:** LCC, HUM **ISP:** AFR, AMS

AMU 133 - Music of Latin America

Course Units: 1.0 Latin American music-cultures approached through live performance, lecture, video, and audio. Survey samples from folk, popular, and classical traditions, with special emphasis on the musics of Cuba and Brazil. **CC:** LCC, HUM **ISP:** AFR, LAS

AMU 134 - Music and Culture of Africa

Course Units: 1.0 Through an examination of traditional and popular music from across the continent, students will gain a better understanding of the integral role played by music in African culture. **CC:** LCC, HUM, JCAD, JCHF **ISP:** AFR

AMU 220 - Mapping Musical Lives: Ethnography of Performing Arts

Course Units: 1.0 This seminar explores the relationship between music and culture through live performance, discussion, video and audio, and workshops in a variety of world music areas. Students will also consider how one conducts research on performing arts, culminating in a focused project on music-making in the community. Students thus will encounter diverse peoples and their musical practices in cross-cultural comparison while also exploring research methodology through their own work. **Cross-Listed:** ANT 274 **CC:** LCC, HUM, JCHF, JSPE, WAC-R **ISP:** REE

AMU 221 - From Rhythm and Blues to Radiohead: The History of Rock & Roll

Course Units: 1.0 Explores the historical development of Anglo-American rock-and-roll through lecture, video and sound recordings. This course will rely heavily on film, with an accompanying series featuring documentaries, concert films, musicals and more. Students will gain a greater understanding of the socio-cultural contexts that informed stylistic change, as well as consider the continued relevance of rock today. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, JCHF, JCAD, WAC **ISP:** AMS, GSWS

AMU 223 - Global Hip Hop

Course Units: 1 Hip hop has grown from its late 1970s NYC roots to become a vehicle for self-expression around the globe. After introductory topics including the basics of music, an overview of the music industry, and the roots of hip hop, the course will examine case studies in global hip hop culture. **CC:** HUM, WAC-R, JCAD, JCHF **ISP:** AFR

AMU 235 - Latin Percussion Workshop

Course Units: 1.0 The goal of this course is to give students an in-depth understanding of Afro-Cuban and Afro-Brazilian music through studying genres (rumba, son, mambo, salsa, comparsa, samba, forro) from inside the

percussion section. In addition to ensemble work, students will research and transcribe Latin music styles. The course will culminate in a public performance/presentation at the end of the term. Entry to the course by audition; previous instrumental experience desirable but not required. **CC:** LCC, JCAD, JCHF **ISP:** AFR, LAS

AMU 306 - The Evolution of Popular Song

Course Units: 1.0 From minstrelsy and vaudeville through Tin Pan Alley, Motown, the Beatles, Burt Bacharach, Billy Joel, and Taylor Swift, this course will examine the creation, performance, transmission, and reception of popular song. In addition to analyzing lyrical/musical content as well as historical context, students will compose words and music in the styles of established master songwriters. **Prerequisite(s):** AMU 101 or permission of the instructor. **CC:** HUM

AMU 307 - The Art and Music of Radiohead

Course Units: 1.0 Course Units: 1.0 This course focuses on the music and art of seminal rock group Radiohead. Formed in the 1980s in Oxfordshire, UK, Radiohead has released nine critically acclaimed studio albums and more than 40 music videos, topping thecharts for decades, and rivaling The Beatles for a top spot in the pantheon of British rock legends. They are widely respected not only for their musical innovation, involving creative modality and rhythmic organization but their ecological mindfulness, political edginess and industry changing approaches to the production of popular music, ever critical of consumer capitalism. This combination has allowed the group to maintain creative autonomy and authenticity, while garnering worldwide recognitionand commercial success. The group's emergence from British synth-pop and evolution to contemporary icons will be explored
through reading, listening, musical analysis, and video. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, GCHF, GCAD, GLIT, WAC

AMU 320 - Encounters with East Asian Music Cultures

Course Units: 1.0 Through live performance, discussion, and composition, this course explores key characteristics of East Asian Music Cultures. Particular attention is paid to the processes of cultural exchange between China, Korea, Japan and the rest of the world that have resulted in the rich breadth of performance traditions expressed today. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AIS, GSW

AMU 325 - Music, Community Engagement, and Sustainable Instruments: A Service-Learning Course

Course Units: 1 Music, Civic Engagement, and Sustainable Instruments is a service learning course that allows students to engage with the local Schenectady community by partnering with the Mont Pleasant Middle School 21st Century Afterschool Program; explore sustainable design, such as upcycling found objects into new sound producing instruments or related artistic objects; and collectively explore and expand your own ability to enact positive social change through your academic pursuits and beyond. **CC:** HUM, GCHF, GCAD, GSPE

ONE TECHNOLOGY COURSE

Chosen from below:

AMU 140 - Music Technology I: Transforming Sound, Making Music

Course Units: 1.0 An introduction to the tools and techniques of organizing sound in meaningful ways using computers. Students learn basic recording techniques, audio editing, mixing, sequencing, synthetic sound design, and basic compositional techniques in order to facilitate the creation of original, brief compositions.

AMU 240 - Music Technology II: Recording and Mixing Sound

Course Units: 1 This course focuses on the hardware and software tools, techniques, and practices necessary to produce polished pieces of music. Through both technical and creative projects, students dive deeper into concepts from acoustics and psychoacoustics, microphone placement and selection, recording practices, signal routing, sound processing and mixing, and synthesizer programming. **CC:** HUM

ONE CREATIVITY COURSE

Chosen from below:

AMU 202 - Musical Thinking: World and Pop

Course Units: 1.0 This course will examine music traditions outside the canon of Western classical music, including American folk, jazz and popular music as well as traditional and popular music from around the world. In order to better understand the theory and practice of these music's, students will pursue topics including the dichotomy between oral tradition and written notation; various ways of organizing pitch, rhythm, and meter; and the process of transcription. **Prerequisite(s):** AMU 100 or AMU 101 or permission of the instructor. **CC:** HUM, LCC

AMU 215 - Music in the 20th & 21st Centuries

Course Units: 1.0 The study of significant styles and developments in the music of the last hundred years (both "classical" and popular), approached through analysis, performance, and composition. **Prerequisite(s):** AMU 101or permission of the instructor. **CC:** HUM **ISP:** REE

AMU 220 - Mapping Musical Lives: Ethnography of Performing Arts

Course Units: 1.0 This seminar explores the relationship between music and culture through live performance, discussion, video and audio, and workshops in a variety of world music areas. Students will also consider how one conducts research on performing arts, culminating in a focused project on music-making in the community. Students thus will encounter diverse peoples and their musical practices in cross-cultural comparison while also exploring research methodology through their own work. **Cross-Listed:** ANT 274 **CC:** LCC, HUM, JCHF, JSPE, WAC-R **ISP:** REE

AMU 221 - From Rhythm and Blues to Radiohead: The History of Rock & Roll

Course Units: 1.0 Explores the historical development of Anglo-American rock-and-roll through lecture, video and sound recordings. This course will rely heavily on film, with an accompanying series featuring documentaries, concert films, musicals and more. Students will gain a greater understanding of the socio-cultural contexts that informed stylistic change, as well as consider the continued relevance of rock today. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, JCHF, JCAD, WAC **ISP:** AMS, GSWS

AMU 230 - Musical Theater & Opera Scenes Workshop

Course Units: 1.0 This class aims to help students discover their potential for singing, acting, and dancing through the performance of scenes from the opera and musical theater literature. Special emphasis will be given to the improvement of sight-reading. Through a combination of lecture and hands-on performance, students will also learn to understand the basics of voice types, vocal technique, and other performance-related issues in the field. Guest speakers and instructors will be invited to share their experiences with students to further their understanding of the vocal performance industry. **CC:** HUM **ISP:** AMS

AMU 231 - Chamber Music Workshop

Course Units: 1.0 Rehearsal and performance of chamber music primarily from Classical and Romantic periods. **CC:** HUM

AMU 232 - Jazz Workshop

Course Units: 1.0 Students will perform, analyze, and compose music written in jazz idioms; students will develop skills in improvisation. **CC:** HUM

AMU 233 - Japanese Drumming Workshop

Course Units: 1.0 This course introduces Japanese drumming, exploring its origins and subsequent development as a national art form following WWII, and then its ultimate spread globally as a voice of Asian-American activism. The course emphasizes performance on the drums and culminates in a final concert and performance project. No previous musical experience is required. **CC:** LCC, HUM, JCAD, JCHF, JSPE **ISP:** AIS, GSW

AMU 240 - Music Technology II: Recording and Mixing Sound

Course Units: 1 This course focuses on the hardware and software tools, techniques, and practices necessary to produce polished pieces of music. Through both technical and creative projects, students dive deeper into concepts from acoustics and psychoacoustics, microphone placement and selection, recording practices, signal routing, sound processing and mixing, and synthesizer programming. **CC:** HUM

AMU 301 - Music Theory: Materials and Design III

Course Units: 1 Through score analysis and composition, this course goes further into the characteristics that define common musical forms. Students explore concepts in texture, timbre, orchestration, and longer form composition. **Prerequisite(s):** AMU 201 **CC:** HUM

AMU 303 - Conducting

Course Units: 1.0 Fundamentals of conducting vocal and instrumental ensembles, including score reading and preparation, beat patterns, gestures, and rehearsal techniques. **Prerequisite(s):** permission of the instructor. **CC:** HUM

AMU 304 - Composition and Performance Projects

Course Units: 1.0 The creation and notation of freestyle compositions with emphasis on individual instruction. **Prerequisite(s):** AMU 201 or permission from the instructor. **CC:** HUM

AMU 305 - Vocal Arranging

Course Units: 1.0 Writing and arranging for the voice, in folk, classical, jazz, and popular contexts. **Prerequisite(s):** AMU 101 or permission of the instructor. **CC:** HUM

AMU 306 - The Evolution of Popular Song

Course Units: 1.0 From minstrelsy and vaudeville through Tin Pan Alley, Motown, the Beatles, Burt Bacharach, Billy Joel, and Taylor Swift, this course will examine the creation, performance, transmission, and reception of popular song.

In addition to analyzing lyrical/musical content as well as historical context, students will compose words and music in the styles of established master songwriters. **Prerequisite(s):** AMU 101 or permission of the instructor. **CC:** HUM

AMU 307 - The Art and Music of Radiohead

Course Units: 1.0 Course Units: 1.0 This course focuses on the music and art of seminal rock group Radiohead. Formed in the 1980s in Oxfordshire, UK, Radiohead has released nine critically acclaimed studio albums and more than 40 music videos, topping thecharts for decades, and rivaling The Beatles for a top spot in the pantheon of British rock legends. They are widely respected not only for their musical innovation, involving creative modality and rhythmic organization but their ecological mindfulness, political edginess and industry changing approaches to the production of popular music, ever critical of consumer capitalism. This combination has allowed the group to maintain creative autonomy and authenticity, while garnering worldwide recognitionand commercial success. The group's emergence from British synth-pop and evolution to contemporary icons will be explored
through reading, listening, musical analysis, and video. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, GCHF, GCAD, GLIT, WAC

AMU 320 - Encounters with East Asian Music Cultures

Course Units: 1.0 Through live performance, discussion, and composition, this course explores key characteristics of East Asian Music Cultures. Particular attention is paid to the processes of cultural exchange between China, Korea, Japan and the rest of the world that have resulted in the rich breadth of performance traditions expressed today. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AIS, GSW

AMU 325 - Music, Community Engagement, and Sustainable Instruments: A Service-Learning Course

Course Units: 1 Music, Civic Engagement, and Sustainable Instruments is a service learning course that allows students to engage with the local Schenectady community by partnering with the Mont Pleasant Middle School 21st Century Afterschool Program; explore sustainable design, such as upcycling found objects into new sound producing instruments or related artistic objects; and collectively explore and expand your own ability to enact positive social change through your academic pursuits and beyond. **CC:** HUM, GCHF, GCAD, GSPE

ONE PERFORMANCE COURSE

Chosen from below

AMU 230 - Musical Theater & Opera Scenes Workshop

Course Units: 1.0 This class aims to help students discover their potential for singing, acting, and dancing through the performance of scenes from the opera and musical theater literature. Special emphasis will be given to the improvement of sight-reading. Through a combination of lecture and hands-on performance, students will also learn to understand the basics of voice types, vocal technique, and other performance-related issues in the field. Guest speakers and instructors will be invited to share their experiences with students to further their understanding of the vocal performance industry. **CC:** HUM **ISP:** AMS

AMU 231 - Chamber Music Workshop

Course Units: 1.0 Rehearsal and performance of chamber music primarily from Classical and Romantic periods. **CC:** HUM

AMU 232 - Jazz Workshop

Course Units: 1.0 Students will perform, analyze, and compose music written in jazz idioms; students will develop skills in improvisation. **CC:** HUM

AMU 233 - Japanese Drumming Workshop

Course Units: 1.0 This course introduces Japanese drumming, exploring its origins and subsequent development as a national art form following WWII, and then its ultimate spread globally as a voice of Asian-American activism. The course emphasizes performance on the drums and culminates in a final concert and performance project. No previous musical experience is required. **CC:** LCC, HUM, JCAD, JCHF, JSPE **ISP:** AIS, GSW

AMU 234 - Balinese Gamelan Workshop

Course Units: 1.0 This course introduces Balinese music and culture, exploring the importance of music, dance, and religion in the everyday life of Balinese people. The course emphasizes performance of Balinese gong kebyar (an orchestral form featuring xylophones, gongs, drums, and cymbals) and culminates in a final concert and performance protest. No previous musical experience is required. **CC:** LCC, HUM **ISP:** AIS

AMU 235 - Latin Percussion Workshop

Course Units: 1.0 The goal of this course is to give students an in-depth understanding of Afro-Cuban and Afro-Brazilian music through studying genres (rumba, son, mambo, salsa, comparsa, samba, forro) from inside the percussion section. In addition to ensemble work, students will research and transcribe Latin music styles. The course will culminate in a public performance/presentation at the end of the term. Entry to the course by audition; previous instrumental experience desirable but not required. **CC:** LCC, JCAD, JCHF **ISP:** AFR, LAS

AMU 303 - Conducting

Course Units: 1.0 Fundamentals of conducting vocal and instrumental ensembles, including score reading and preparation, beat patterns, gestures, and rehearsal techniques. **Prerequisite(s):** permission of the instructor. **CC:** HUM

AMU 340 - Early Music Seminar: Music of the Middle Ages and Renaissance

Course Units: 1.0 While distant in time, music of the Middle Ages and Renaissance resonates with modern times. Students learn how court musicians, monks, jongleurs, and others dealt with topics that still matter today - from love to war - only in different musical languages. Through individual analyses of texts and music, active listening exercises, classroom discussions, papers, performances, and projects, students explore the lives of people living between the ninth through the sixteenth centuries. **CC:** HUL, HUM, WAC, JCAD, JCHF, JLIT **ISP:** REL

One term senior project

AMU 497 - Music One Term Senior Project

Course Units: 1.0

Two years of practicum credit in faculty-led ensemble

Requirements for Honors in Music:

To be eligible for departmental honors, a student must fulfill the following requirements: (1) a minimum index of 3.3 in music; (2) for full Majors: a grade of "A minus" or better in a two-term senior project in composition, performance, research, or analysis (AMU 498-AMU 499); for Interdepartmental Majors: a grade of "A minus" or better in a one-term senior project in composition, performance, research, or analysis (AMU 497). In addition, the student must satisfy College requirements for departmental honors.

Course Selection Guidelines:

Students are required to consult their music faculty advisors when choosing electives. Concentrations are available in composition, music history, music technology, performance, and ethnomusicology. All students should plan to complete the 100- and 200-level music theory sequence early in their music studies. AMU 301 Music Theory: Materials and Design III is strongly recommended as a capstone theory course for students specializing in composition, performance, or music history. The department values performance as an essential component of musical training. The list of ensembles follows the music course descriptions.

In addition to regular coursework, students may work with individual faculty in independent studies on special topics. These could include conducting, composition, counterpoint, community-based internships, and technology. Please consult your advisor or the Chair of the Music Department for further information.

Music Minor

Requirements for the Minor in Music good through the Class of 2025

Two theory courses:

AMU 101 - Music Theory: Materials and Design I

Course Units: 1.0 This course is an introduction to concepts in music theory that enable musicians to analyze, compose, perform, and think more critically about the elements of music. Through academic inquiry and creative application, students will develop a deeper understanding of the materials that underpin music, including melody, harmony, voice leading, rhythm, texture, phrasing, and form. Students will gain insight into how composers design and construct music and then apply those techniques to their own composition assignments and projects. **Prerequisite(s):** Ability to read music or permission of the instructor. **CC:** HUM

AMU 201 - Music Theory: Materials and Design II

Course Units: AMU 201 delves deeper into melody, harmony, and voice leading, with a particular focus on modulation and chromaticism. This course touches on a broad spectrum of topics, including melodic phrasing, tonicization and modulation, chromatic voice leading, and an expanded harmonic vocabulary. Through the analysis of classical, jazz, and popular music, this course encourages students to explore and understand the application of these concepts in various musical genres. **Prerequisite(s):** AMU 101 or permission from the instructor. **CC:** HUM

Two music history courses

Chosen from below:

AMU 212 - Bach, Handel, and their Predecessors

Course Units: 1.0 This course is a study of music composed between about 1600 and 1750. Among the topics that we explore are: recently discovered compositions by underrepresented figures such as Manuel del Surmaya of Mexico; works influenced by architecture; connections between various styles of opera and the modern-day musical; the impact of dance rhythms on vocal and instrumental music; and the role of improvisation on the one hand and strict counterpoint on the other in the development of music from the seventeenth and early eighteenth centuries. **CC:** HUM, HUL, LCC, WAC-R, JCAD, JCHF, JLIT, **ISP:** REL

AMU 213 - Haydn, Mozart and Beethoven

Course Units: 1.0 Vienna was the center of European art music from the late eighteenth century through the early nineteenth century. This course examines music by Haydn, Mozart, Beethoven, and underrepresented composers such as Joseph Bologne. A thread throughout the course is a discussion about class struggles as seen through the lives of the composers, as well as through a close examination of the classic opera The Marriage of Figaro. Students come to an understanding of Vienna at one of the city's greatest musical heights. **CC:** HUM, JCAD, JCHF, JLIT, WAC

AMU 214 - Romanticism

Course Units: 1.0 The nineteenth century witnessed the development of countless individual musical styles, as opposed to the more homogeneous sounds of previous generations. Through listening exercises, studies of texts and music, and historical documents, students learn to distinguish characteristics of music written by composers such as Chopin, Schubert, Clara and Robert Schumann, Felix and Fanny Mendelssohn, Bizet, Verdi, Wagner, Brahms, Ethel Smythe, Amy Beach, Coleridge-Taylor, Gottschalk, and others. **CC:** HUL, JCAD, JCHF, WAC **ISP:** REE

AMU 215 - Music in the 20th & 21st Centuries

Course Units: 1.0 The study of significant styles and developments in the music of the last hundred years (both "classical" and popular), approached through analysis, performance, and composition. **Prerequisite(s):** AMU 101or permission of the instructor. **CC:** HUM **ISP:** REE

AMU 340 - Early Music Seminar: Music of the Middle Ages and Renaissance

Course Units: 1.0 While distant in time, music of the Middle Ages and Renaissance resonates with modern times. Students learn how court musicians, monks, jongleurs, and others dealt with topics that still matter today - from love to war - only in different musical languages. Through individual analyses of texts and music, active listening exercises, classroom discussions, papers, performances, and projects, students explore the lives of people living between the ninth through the sixteenth centuries. **CC:** HUL, HUM, WAC, JCAD, JCHF, JLIT **ISP:** REL

A world music course

AMU 202 - Musical Thinking: World and Pop

Course Units: 1.0 This course will examine music traditions outside the canon of Western classical music, including American folk, jazz and popular music as well as traditional and popular music from around the world. In order to better understand the theory and practice of these music's, students will pursue topics including the dichotomy between oral tradition and written notation; various ways of organizing pitch, rhythm, and meter; and the process of transcription. **Prerequisite(s):** AMU 100 or AMU 101 or permission of the instructor. **CC:** HUM, LCC

or

AMU 220 - Mapping Musical Lives: Ethnography of Performing Arts

Course Units: 1.0 This seminar explores the relationship between music and culture through live performance, discussion, video and audio, and workshops in a variety of world music areas. Students will also consider how one conducts research on performing arts, culminating in a focused project on music-making in the community. Students thus will encounter diverse peoples and their musical practices in cross-cultural comparison while also exploring research methodology through their own work. **Cross-Listed:** ANT 274 **CC:** LCC, HUM, JCHF, JSPE, WAC-R **ISP:** REE

One music elective

To be chosen in consultation with your advisor.

Additional Requirements

One year of practicum credit in faculty-led ensemble.

Music Department Curriculum Beginning with the Class of 2026

ONE COURSE IN MUSICAL LITERACY (ML)

AMU 101 - Music Theory: Materials and Design I

Course Units: 1.0 This course is an introduction to concepts in music theory that enable musicians to analyze, compose, perform, and think more critically about the elements of music. Through academic inquiry and creative application, students will develop a deeper understanding of the materials that underpin music, including melody, harmony, voice leading, rhythm, texture, phrasing, and form. Students will gain insight into how composers design and construct music and then apply those techniques to their own composition assignments and projects. **Prerequisite(s):** Ability to read music or permission of the instructor. **CC:** HUM

TWO HISTORICAL AND CULTURAL CONTEXT COURSES (HCC)

Chosen from two categories:

- Historical Musicology
- Global and Popular Musics

To be chosen from a list of approved courses

At least one must be outside of the primary area.

Historical Musicology

AMU 125 - World Religions and Music

Course Units: 1.0 Music, deemed by some to be a gift from the Divine, continues to play an important role in the histories of all religions. Through an examination of three religions - Buddhism, Judaism, and Christianity - students will come to an understanding of the intricate relationships among music, theology, liturgy, ritual, and human religious expressions in different cultures and at different time periods. **CC:** HUM, LCC **ISP:** REL

AMU 160 - From Chant to Mozart

Course Units: 1.0 A study of compositions from the ninth century through the time of the French Revolution. Among the many topics included are Gregorian chant, music for kings and queens from the Renaissance, the effect of the Reformation and Counter-Reformation on music; the invention of opera (the predecessor of the musical); Vivaldi's concertos, sacred music by Bach and Handel; and symphonies and operas by Haydn and Mozart. This course is not intended for music majors. **CC:** HUM, JCAD, JCHF, JLIT, WAC **ISP:** REL

AMU 161 - From Beethoven to Bernstein

Course Units: 1.0 A study of compositions from the end of the eighteenth century through the present. A few of the composers we study are Beethoven, Chopin, Mendelssohn, Schubert, Clara and Robert Schumann, Wagner, Brahms, Debussy, Stravinsky, Schoenberg, Ives, Copland, Varese, Bernstein, and John Adams. This course is not intended for music majors. **CC:** HUM, WAC, JCAD, JCHF, JLIT, WAC **ISP:** REE

AMU 212 - Bach, Handel, and their Predecessors

Course Units: 1.0 This course is a study of music composed between about 1600 and 1750. Among the topics that we explore are: recently discovered compositions by underrepresented figures such as Manuel del Surmaya of Mexico; works influenced by architecture; connections between various styles of opera and the modern-day musical; the impact of dance rhythms on vocal and instrumental music; and the role of improvisation on the one hand and strict counterpoint on the other in the development of music from the seventeenth and early eighteenth centuries. **CC:** HUM, HUL, LCC, WAC-R, JCAD, JCHF, JLIT, **ISP:** REL

AMU 213 - Haydn, Mozart and Beethoven

Course Units: 1.0 Vienna was the center of European art music from the late eighteenth century through the early nineteenth century. This course examines music by Haydn, Mozart, Beethoven, and underrepresented composers such as Joseph Bologne. A thread throughout the course is a discussion about class struggles as seen through the lives of the composers, as well as through a close examination of the classic opera The Marriage of Figaro. Students come to an understanding of Vienna at one of the city's greatest musical heights. **CC:** HUM, JCAD, JCHF, JLIT, WAC

AMU 214 - Romanticism

Course Units: 1.0 The nineteenth century witnessed the development of countless individual musical styles, as opposed to the more homogeneous sounds of previous generations. Through listening exercises, studies of texts and music, and historical documents, students learn to distinguish characteristics of music written by composers such as Chopin, Schubert, Clara and Robert Schumann, Felix and Fanny Mendelssohn, Bizet, Verdi, Wagner, Brahms, Ethel Smythe, Amy Beach, Coleridge-Taylor, Gottschalk, and others. **CC:** HUL, JCAD, JCHF, WAC **ISP:** REE

AMU 215 - Music in the 20th & 21st Centuries

Course Units: 1.0 The study of significant styles and developments in the music of the last hundred years (both "classical" and popular), approached through analysis, performance, and composition. **Prerequisite(s):** AMU 101or permission of the instructor. **CC:** HUM **ISP:** REE

AMU 340 - Early Music Seminar: Music of the Middle Ages and Renaissance

Course Units: 1.0 While distant in time, music of the Middle Ages and Renaissance resonates with modern times. Students learn how court musicians, monks, jongleurs, and others dealt with topics that still matter today - from

love to war - only in different musical languages. Through individual analyses of texts and music, active listening exercises, classroom discussions, papers, performances, and projects, students explore the lives of people living between the ninth through the sixteenth centuries. **CC:** HUL, HUM, WAC, JCAD, JCHF, JLIT **ISP:** REL

Global and Popular Musics

AMU 120 - Making Music, Shaping Selves: Introduction to World Music

Course Units: 1.0 Introduces music from various world areas including Africa, Latin America, Asia, and Europe through live performance, lecture, video and audio. Students will increase familiarity with a wide range of musical styles while also exploring the relationship between music, identity and society. **Cross-Listed:** ANT 148 **CC:** LCC, HUM

AMU 131 - Music of Black America

Course Units: 1.0 Black music in America from its African beginnings to present-day pop styles, approached through live performance, lecture, video, and sound recordings. Special emphasis on gospel, blues, jazz, and rap. **Prereq/Corequisite(s):** Not open to students who have taken AMU 132. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AFR, AMS

AMU 132 - The History of Jazz

Course Units: 1.0 A study of the important personalities and trends in the evolution of jazz, approached through reading, video and sound recordings, and live performance. **Prereq/Corequisite(s):** Not open to students who have taken AMU 131. **CC:** LCC, HUM **ISP:** AFR, AMS

AMU 133 - Music of Latin America

Course Units: 1.0 Latin American music-cultures approached through live performance, lecture, video, and audio. Survey samples from folk, popular, and classical traditions, with special emphasis on the musics of Cuba and Brazil. **CC:** LCC, HUM **ISP:** AFR, LAS

AMU 134 - Music and Culture of Africa

Course Units: 1.0 Through an examination of traditional and popular music from across the continent, students will gain a better understanding of the integral role played by music in African culture. **CC:** LCC, HUM, JCAD, JCHF **ISP:** AFR

AMU 220 - Mapping Musical Lives: Ethnography of Performing Arts

Course Units: 1.0 This seminar explores the relationship between music and culture through live performance, discussion, video and audio, and workshops in a variety of world music areas. Students will also consider how one conducts research on performing arts, culminating in a focused project on music-making in the community. Students thus will encounter diverse peoples and their musical practices in cross-cultural comparison while also exploring research methodology through their own work. **Cross-Listed:** ANT 274 **CC:** LCC, HUM, JCHF, JSPE, WAC-R **ISP:** REE

AMU 223 - Global Hip Hop

Course Units: 1 Hip hop has grown from its late 1970s NYC roots to become a vehicle for self-expression around the globe. After introductory topics including the basics of music, an overview of the music industry, and the roots of hip hop, the course will examine case studies in global hip hop culture. **CC:** HUM, WAC-R, JCAD, JCHF **ISP:** AFR

AMU 221 - From Rhythm and Blues to Radiohead: The History of Rock & Roll

Course Units: 1.0 Explores the historical development of Anglo-American rock-and-roll through lecture, video and sound recordings. This course will rely heavily on film, with an accompanying series featuring documentaries, concert films, musicals and more. Students will gain a greater understanding of the socio-cultural contexts that informed stylistic change, as well as consider the continued relevance of rock today. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, JCHF, JCAD, WAC **ISP:** AMS, GSWS

AMU 235 - Latin Percussion Workshop

Course Units: 1.0 The goal of this course is to give students an in-depth understanding of Afro-Cuban and Afro-Brazilian music through studying genres (rumba, son, mambo, salsa, comparsa, samba, forro) from inside the percussion section. In addition to ensemble work, students will research and transcribe Latin music styles. The course will culminate in a public performance/presentation at the end of the term. Entry to the course by audition; previous instrumental experience desirable but not required. **CC:** LCC, JCAD, JCHF **ISP:** AFR, LAS

AMU 306 - The Evolution of Popular Song

Course Units: 1.0 From minstrelsy and vaudeville through Tin Pan Alley, Motown, the Beatles, Burt Bacharach, Billy Joel, and Taylor Swift, this course will examine the creation, performance, transmission, and reception of popular song. In addition to analyzing lyrical/musical content as well as historical context, students will compose words and music in the styles of established master songwriters. **Prerequisite(s):** AMU 101 or permission of the instructor. **CC:** HUM

AMU 307 - The Art and Music of Radiohead

Course Units: 1.0 Course Units: 1.0 This course focuses on the music and art of seminal rock group Radiohead. Formed in the 1980s in Oxfordshire, UK, Radiohead has released nine critically acclaimed studio albums and more than 40 music videos, topping thecharts for decades, and rivaling The Beatles for a top spot in the pantheon of British rock legends. They are widely respected not only for their musical innovation, involving creative modality and rhythmic organization but their ecological mindfulness, political edginess and industry changing approaches to the production of popular music, ever critical of consumer capitalism. This combination has allowed the group to maintain creative autonomy and authenticity, while garnering worldwide recognitionand commercial success. The group's emergence from British synth-pop and evolution to contemporary icons will be explored
through reading, listening, musical analysis, and video. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, GCHF, GCAD, GLIT, WAC

AMU 320 - Encounters with East Asian Music Cultures

Course Units: 1.0 Through live performance, discussion, and composition, this course explores key characteristics of East Asian Music Cultures. Particular attention is paid to the processes of cultural exchange between China, Korea, Japan and the rest of the world that have resulted in the rich breadth of performance traditions expressed today. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AIS, GSW

AMU 325 - Music, Community Engagement, and Sustainable Instruments: A Service-Learning Course

Course Units: 1 Music, Civic Engagement, and Sustainable Instruments is a service learning course that allows students to engage with the local Schenectady community by partnering with the Mont Pleasant Middle School 21st Century Afterschool Program; explore sustainable design, such as upcycling found objects into new sound producing instruments or related artistic objects; and collectively explore and expand your own ability to enact positive social change through your academic pursuits and beyond. **CC:** HUM, GCHF, GCAD, GSPE

ONE TECHNOLOGY COURSE

AMU 140 - Music Technology I: Transforming Sound, Making Music

Course Units: 1.0 An introduction to the tools and techniques of organizing sound in meaningful ways using computers. Students learn basic recording techniques, audio editing, mixing, sequencing, synthetic sound design, and basic compositional techniques in order to facilitate the creation of original, brief compositions.

Or

AMU 240 - Music Technology II: Recording and Mixing Sound

Course Units: 1 This course focuses on the hardware and software tools, techniques, and practices necessary to produce polished pieces of music. Through both technical and creative projects, students dive deeper into concepts from acoustics and psychoacoustics, microphone placement and selection, recording practices, signal routing, sound processing and mixing, and synthesizer programming. **CC:** HUM

ONE CREATIVITY COURSE

To be chosen from a list of approved courses.

AMU 201 - Music Theory: Materials and Design II

Course Units: AMU 201 delves deeper into melody, harmony, and voice leading, with a particular focus on modulation and chromaticism. This course touches on a broad spectrum of topics, including melodic phrasing, tonicization and modulation, chromatic voice leading, and an expanded harmonic vocabulary. Through the analysis of classical, jazz, and popular music, this course encourages students to explore and understand the application of these concepts in various musical genres. **Prerequisite(s):** AMU 101 or permission from the instructor. **CC:** HUM

AMU 202 - Musical Thinking: World and Pop

Course Units: 1.0 This course will examine music traditions outside the canon of Western classical music, including American folk, jazz and popular music as well as traditional and popular music from around the world. In order to better understand the theory and practice of these music's, students will pursue topics including the dichotomy between oral tradition and written notation; various ways of organizing pitch, rhythm, and meter; and the process of transcription. **Prerequisite(s):** AMU 100 or AMU 101 or permission of the instructor. **CC:** HUM, LCC

AMU 215 - Music in the 20th & 21st Centuries

Course Units: 1.0 The study of significant styles and developments in the music of the last hundred years (both "classical" and popular), approached through analysis, performance, and composition. **Prerequisite(s):** AMU 101or permission of the instructor. **CC:** HUM **ISP:** REE

AMU 220 - Mapping Musical Lives: Ethnography of Performing Arts

Course Units: 1.0 This seminar explores the relationship between music and culture through live performance, discussion, video and audio, and workshops in a variety of world music areas. Students will also consider how one conducts research on performing arts, culminating in a focused project on music-making in the community. Students thus will encounter diverse peoples and their musical practices in cross-cultural comparison while also exploring research methodology through their own work. **Cross-Listed:** ANT 274 **CC:** LCC, HUM, JCHF, JSPE, WAC-R **ISP:** REE

AMU 221 - From Rhythm and Blues to Radiohead: The History of Rock & Roll

Course Units: 1.0 Explores the historical development of Anglo-American rock-and-roll through lecture, video and sound recordings. This course will rely heavily on film, with an accompanying series featuring documentaries, concert films, musicals and more. Students will gain a greater understanding of the socio-cultural contexts that informed stylistic change, as well as consider the continued relevance of rock today. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, JCHF, JCAD, WAC **ISP:** AMS, GSWS

AMU 230 - Musical Theater & Opera Scenes Workshop

Course Units: 1.0 This class aims to help students discover their potential for singing, acting, and dancing through the performance of scenes from the opera and musical theater literature. Special emphasis will be given to the improvement of sight-reading. Through a combination of lecture and hands-on performance, students will also learn to understand the basics of voice types, vocal technique, and other performance-related issues in the field. Guest speakers and instructors will be invited to share their experiences with students to further their understanding of the vocal performance industry. **CC:** HUM **ISP:** AMS

AMU 234 - Balinese Gamelan Workshop

Course Units: 1.0 This course introduces Balinese music and culture, exploring the importance of music, dance, and religion in the everyday life of Balinese people. The course emphasizes performance of Balinese gong kebyar (an orchestral form featuring xylophones, gongs, drums, and cymbals) and culminates in a final concert and performance protest. No previous musical experience is required. **CC:** LCC, HUM **ISP:** AIS

AMU 231 - Chamber Music Workshop

Course Units: 1.0 Rehearsal and performance of chamber music primarily from Classical and Romantic periods. **CC:** HUM

AMU 232 - Jazz Workshop

Course Units: 1.0 Students will perform, analyze, and compose music written in jazz idioms; students will develop skills in improvisation. **CC:** HUM

AMU 233 - Japanese Drumming Workshop

Course Units: 1.0 This course introduces Japanese drumming, exploring its origins and subsequent development as a national art form following WWII, and then its ultimate spread globally as a voice of Asian-American activism. The course emphasizes performance on the drums and culminates in a final concert and performance project. No previous musical experience is required. **CC:** LCC, HUM, JCAD, JCHF, JSPE **ISP:** AIS, GSW

AMU 240 - Music Technology II: Recording and Mixing Sound

Course Units: 1 This course focuses on the hardware and software tools, techniques, and practices necessary to produce polished pieces of music. Through both technical and creative projects, students dive deeper into concepts from acoustics and psychoacoustics, microphone placement and selection, recording practices, signal routing, sound processing and mixing, and synthesizer programming. **CC:** HUM

AMU 301 - Music Theory: Materials and Design III

Course Units: 1 Through score analysis and composition, this course goes further into the characteristics that define common musical forms. Students explore concepts in texture, timbre, orchestration, and longer form composition. **Prerequisite(s):** AMU 201 **CC:** HUM

AMU 303 - Conducting

Course Units: 1.0 Fundamentals of conducting vocal and instrumental ensembles, including score reading and preparation, beat patterns, gestures, and rehearsal techniques. **Prerequisite(s):** permission of the instructor. **CC:** HUM

AMU 304 - Composition and Performance Projects

Course Units: 1.0 The creation and notation of freestyle compositions with emphasis on individual instruction. **Prerequisite(s):** AMU 201 or permission from the instructor. **CC:** HUM

AMU 305 - Vocal Arranging

Course Units: 1.0 Writing and arranging for the voice, in folk, classical, jazz, and popular contexts. **Prerequisite(s):** AMU 101 or permission of the instructor. **CC:** HUM

AMU 306 - The Evolution of Popular Song

Course Units: 1.0 From minstrelsy and vaudeville through Tin Pan Alley, Motown, the Beatles, Burt Bacharach, Billy Joel, and Taylor Swift, this course will examine the creation, performance, transmission, and reception of popular song. In addition to analyzing lyrical/musical content as well as historical context, students will compose words and music in the styles of established master songwriters. **Prerequisite(s):** AMU 101 or permission of the instructor. **CC:** HUM

AMU 307 - The Art and Music of Radiohead

Course Units: 1.0 Course Units: 1.0 This course focuses on the music and art of seminal rock group Radiohead. Formed in the 1980s in Oxfordshire, UK, Radiohead has released nine critically acclaimed studio albums and more than 40 music videos, topping thecharts for decades, and rivaling The Beatles for a top spot in the pantheon of British rock legends. They are widely respected not only for their musical innovation, involving creative modality and rhythmic organization but their ecological mindfulness, political edginess and industry changing approaches to the production of popular music, ever critical of consumer capitalism. This combination has allowed the group to maintain creative autonomy and authenticity, while garnering worldwide recognitionand commercial success. The group's emergence from British synth-pop and evolution to contemporary icons will be explored
through reading, listening, musical analysis, and video. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, GCHF, GCAD, GLIT, WAC

AMU 320 - Encounters with East Asian Music Cultures

Course Units: 1.0 Through live performance, discussion, and composition, this course explores key characteristics of East Asian Music Cultures. Particular attention is paid to the processes of cultural exchange between China, Korea,

Japan and the rest of the world that have resulted in the rich breadth of performance traditions expressed today. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AIS, GSW

AMU 325 - Music, Community Engagement, and Sustainable Instruments: A Service-Learning Course

Course Units: 1 Music, Civic Engagement, and Sustainable Instruments is a service learning course that allows students to engage with the local Schenectady community by partnering with the Mont Pleasant Middle School 21st Century Afterschool Program; explore sustainable design, such as upcycling found objects into new sound producing instruments or related artistic objects; and collectively explore and expand your own ability to enact positive social change through your academic pursuits and beyond. **CC:** HUM, GCHF, GCAD, GSPE

ONE PERFORMANCE COURSE

To be chosen from a list of approved courses.

AMU 230 - Musical Theater & Opera Scenes Workshop

Course Units: 1.0 This class aims to help students discover their potential for singing, acting, and dancing through the performance of scenes from the opera and musical theater literature. Special emphasis will be given to the improvement of sight-reading. Through a combination of lecture and hands-on performance, students will also learn to understand the basics of voice types, vocal technique, and other performance-related issues in the field. Guest speakers and instructors will be invited to share their experiences with students to further their understanding of the vocal performance industry. **CC:** HUM **ISP:** AMS

AMU 231 - Chamber Music Workshop

Course Units: 1.0 Rehearsal and performance of chamber music primarily from Classical and Romantic periods. **CC:** HUM

AMU 232 - Jazz Workshop

Course Units: 1.0 Students will perform, analyze, and compose music written in jazz idioms; students will develop skills in improvisation. **CC:** HUM

AMU 233 - Japanese Drumming Workshop

Course Units: 1.0 This course introduces Japanese drumming, exploring its origins and subsequent development as a national art form following WWII, and then its ultimate spread globally as a voice of Asian-American activism. The course emphasizes performance on the drums and culminates in a final concert and performance project. No previous musical experience is required. **CC:** LCC, HUM, JCAD, JCHF, JSPE **ISP:** AIS, GSW

AMU 234 - Balinese Gamelan Workshop

Course Units: 1.0 This course introduces Balinese music and culture, exploring the importance of music, dance, and religion in the everyday life of Balinese people. The course emphasizes performance of Balinese gong kebyar (an orchestral form featuring xylophones, gongs, drums, and cymbals) and culminates in a final concert and performance protest. No previous musical experience is required. **CC:** LCC, HUM **ISP:** AIS

AMU 235 - Latin Percussion Workshop

Course Units: 1.0 The goal of this course is to give students an in-depth understanding of Afro-Cuban and Afro-Brazilian music through studying genres (rumba, son, mambo, salsa, comparsa, samba, forro) from inside the percussion section. In addition to ensemble work, students will research and transcribe Latin music styles. The course will culminate in a public performance/presentation at the end of the term. Entry to the course by audition; previous instrumental experience desirable but not required. **CC:** LCC, JCAD, JCHF **ISP:** AFR, LAS

AMU 303 - Conducting

Course Units: 1.0 Fundamentals of conducting vocal and instrumental ensembles, including score reading and preparation, beat patterns, gestures, and rehearsal techniques. **Prerequisite(s):** permission of the instructor. **CC:** HUM

AMU 340 - Early Music Seminar: Music of the Middle Ages and Renaissance

Course Units: 1.0 While distant in time, music of the Middle Ages and Renaissance resonates with modern times. Students learn how court musicians, monks, jongleurs, and others dealt with topics that still matter today - from love to war - only in different musical languages. Through individual analyses of texts and music, active listening exercises, classroom discussions, papers, performances, and projects, students explore the lives of people living between the ninth through the sixteenth centuries. **CC:** HUL, HUM, WAC, JCAD, JCHF, JLIT **ISP:** REL

Additional Requirements:

At least one year of practicum credit in faculty-led ensembles.

Course Selection Guidelines:

Students are required to consult their music faculty advisors when choosing electives. Concentrations are available in composition, music history, music technology, performance, and ethnomusicology. All students should plan to complete the 100- and 200-level music theory sequence early in their music studies. AMU 301 Music Theory: Materials and Design III is strongly recommended as a capstone theory course for students specializing in composition, performance, or music history. The department values performance as an essential component of musical training. The list of ensembles follows the music course descriptions.

In addition to regular coursework, students may work with individual faculty in independent studies on special topics. These could include conducting, composition, counterpoint, community-based internships, and technology. Please consult your advisor or the Chair of the Music Department for further information.

Music Technology Minor

Courses and Requirements

Three Required Courses

AMU 140 - Music Technology I: Transforming Sound, Making Music

Course Units: 1.0 An introduction to the tools and techniques of organizing sound in meaningful ways using computers. Students learn basic recording techniques, audio editing, mixing, sequencing, synthetic sound design, and basic compositional techniques in order to facilitate the creation of original, brief compositions.

AMU 240 - Music Technology II: Recording and Mixing Sound

Course Units: 1 This course focuses on the hardware and software tools, techniques, and practices necessary to produce polished pieces of music. Through both technical and creative projects, students dive deeper into concepts from acoustics and psychoacoustics, microphone placement and selection, recording practices, signal routing, sound processing and mixing, and synthesizer programming. **CC:** HUM

ECE 102 - Intro to Audio Electronics

Course Units: 1 In this course students will learn about audio electronics by constructing projects such as an audio amplifier, a smart sound generator, and analog and digital filters to remove unwanted noise or interference. In addition to engaging with the engineering design process, students will reflect upon how audio engineering has and continues to impact society through the creation and manipulation of sound. **CC:** SET, JETS **Note:** Not open to students who have taken ECE 218 , ECE 222 or ECE 225

Three Electives

- One elective from the Music Category
- One elective from the Technology Category
- One elective from either category
  Music

AMU 100 - Elements of Music

Course Units: 1.0 An introductory survey of the main aspects of music theory and practice including rhythm, intervals, scales and keys, melody, harmony, and form, complemented by hands-on creative work in the Music Technology Studio. Designed for students with a minimal background in music **CC:** HUM

AMU 101 - Music Theory: Materials and Design I

Course Units: 1.0 This course is an introduction to concepts in music theory that enable musicians to analyze, compose, perform, and think more critically about the elements of music. Through academic inquiry and creative application, students will develop a deeper understanding of the materials that underpin music, including melody, harmony, voice leading, rhythm, texture, phrasing, and form. Students will gain insight into how composers design and construct music and then apply those techniques to their own composition assignments and projects. **Prerequisite(s):** Ability to read music or permission of the instructor. **CC:** HUM

AMU 202 - Musical Thinking: World and Pop

Course Units: 1.0 This course will examine music traditions outside the canon of Western classical music, including American folk, jazz and popular music as well as traditional and popular music from around the world. In order to better understand the theory and practice of these music's, students will pursue topics including the dichotomy between

oral tradition and written notation; various ways of organizing pitch, rhythm, and meter; and the process of transcription. **Prerequisite(s):** AMU 100 or AMU 101 or permission of the instructor. **CC:** HUM, LCC

AMU 221 - From Rhythm and Blues to Radiohead: The History of Rock & Roll

Course Units: 1.0 Explores the historical development of Anglo-American rock-and-roll through lecture, video and sound recordings. This course will rely heavily on film, with an accompanying series featuring documentaries, concert films, musicals and more. Students will gain a greater understanding of the socio-cultural contexts that informed stylistic change, as well as consider the continued relevance of rock today. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, JCHF, JCAD, WAC **ISP:** AMS, GSWS

AMU 306 - The Evolution of Popular Song

Course Units: 1.0 From minstrelsy and vaudeville through Tin Pan Alley, Motown, the Beatles, Burt Bacharach, Billy Joel, and Taylor Swift, this course will examine the creation, performance, transmission, and reception of popular song. In addition to analyzing lyrical/musical content as well as historical context, students will compose words and music in the styles of established master songwriters. **Prerequisite(s):** AMU 101 or permission of the instructor. **CC:** HUM

AMU 307 - The Art and Music of Radiohead

Course Units: 1.0 Course Units: 1.0 This course focuses on the music and art of seminal rock group Radiohead. Formed in the 1980s in Oxfordshire, UK, Radiohead has released nine critically acclaimed studio albums and more than 40 music videos, topping thecharts for decades, and rivaling The Beatles for a top spot in the pantheon of British rock legends. They are widely respected not only for their musical innovation, involving creative modality and rhythmic organization but their ecological mindfulness, political edginess and industry changing approaches to the production of popular music, ever critical of consumer capitalism. This combination has allowed the group to maintain creative autonomy and authenticity, while garnering worldwide recognitionand commercial success. The group's emergence from British synth-pop and evolution to contemporary icons will be explored
through reading, listening, musical analysis, and video. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, GCHF, GCAD, GLIT, WAC

Technology

Note: Any of the following CSC 10x can count towards this minor. Given the audio and media focus of CSC 105 and 107, these are the recommended courses for the Music Technology Minor.

ECE 222 - Introduction to Circuits and Electronics

Course Units: 1.0 Electrical quantities, circuit principles, analysis and response of basic circuits, semiconductor physics, diodes, transistors, and operational amplifiers. Includes a weekly lab. **Prerequisite(s):** PHY 121 or IMP 121 **Corequisite(s):** ECE 222L **Prereq/Corequisite(s):** Not open to Electrical, Computer, or Biomedical Engineering majors, or to students who have taken ECE 225

ECE 225 - Electric Circuits

Course Units: 1.0 Basic electrical circuit concepts and devices such as Ohm's law, Kirchhoff's laws, Thevenin and Norton equivalents, operational amplifiers, analysis methods, capacitors, inductors, ideal transformers, phasors, AC steady state analysis, complex power, frequency response and filters. Includes a weekly lab. Not open to Mechanical Engineering major **Cross-Listed:** BME 225 **Prerequisite(s):** MTH 112 or MTH 113 **Corequisite(s):** ECE 225L

ECE 240 - Circuits and Systems

Course Units: 1.0 Transient analysis of RLC circuits; modeling of circuits using differential equations; system models and properties; Laplace transforms applied to circuit and system design and analysis; system functions; complex frequency; poles and zeros; stability; frequency response; filter design. Includes a weekly lab. Not open to Mechanical Engineering majors **Cross-Listed:** BME 240 **Prerequisite(s):** ECE 225 or BME 225 **Corequisite(s):** ECE 240L **CC:** WAC

ECE 241 - Discrete Systems

Course Units: 1.0 Discrete signals and systems; classification and properties of systems; difference equations; Z-transform; Fourier series, Fourier transforms, the DFT and FFT; filters and filter design; A/D and D/A converters; applications to audio signal processing. Includes a weekly lab. **Cross-Listed:** BME 241 **Prerequisite(s):** ECE 240 or BME 240 **Corequisite(s):** ECE 241L **CC:** WAC **ISP:** FLM

ECE 325 - Acoustics of Speech Communication

Course Units: 1.0 Acoustics, circuit theory, and signal processing applied to analysis of speech signals; Physiology of speech production; Articulatory phonetics; Acoustical and articulatory description of phonetic features and of prosodic aspects of speech; Perception of speech; Models of speech production and planning; Some applications to recognition and generation of speech by machine, and to the study of speech disorders. **Prerequisite(s):** ECE 241 or BME 241

AVA 262 - Real and Recorded Time - 4D Art

Course Units: 1.0 This course will serve as an introduction to the basic concepts of four-dimensional art or time-based artwork, using a variety of processes and media. Students explore concepts in animation techniques, video and audio production, editing, interactivity, installation, and documentation. Class lectures and hands-on studio time will incorporate technique demonstrations, screenings, readings, discussions, technical exploration, aesthetic inquiry and historical information relevant to the course. Outside work is required. **Prerequisite(s):** Any Studio Art course or permission of instructor. **CC:** HUM **ISP:** FLM

AVA 370 - Robotic Art

Course Units: 1.0 This studio art course will explore the creation of robotic art, interactive art, kinetic sculpture, sound works, light art, and performance environments. Using the Arduino micro-controller and basic electronic techniques, the course will include lectures, hands-on studio time, technique demonstrations, discussions, technical exploration, aesthetic inquiry and historical information relevant to the course. Outside work required. **Prerequisite(s):** Any Visual Arts course or permission of instructor. **CC:** HUM

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 104 - Robots Rule! Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a robotics theme. Introduces students to algorithms, basic data structures, and programming techniques. Students will build and program robots, exploring

mobility, navigation, sensing, and inter-robot communication. Additional class topics include: history of robotics, social and ethical issues, emotionally intelligent behavior and other current topics in robotics. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 105 - Game Development: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a computer games theme. Introduces students to algorithms, basic data structures, and programming techniques. Computer game development is used as an example application area and students implement their own games throughout the course. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area, focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 108 - Scientific Computing: Introduction to Computer Science

Course Units: 1.0 Computers are used as tools in analyzing and solving scientific problems as well as being embedded in many applications and experimental equipment used by today's scientists. This course is designed to introduce students to computer programming and problem solving through the use of Python. Python is a language commonly used by the scientific community, and we will focus on using it to address scientific problems, using extensions that facilitate scientific computing. CC: QMR, SET Note: A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

Music, B.A.

Music Department Current Curriculum Good through the Class of 2025.

Requirements for the Major:

Twelve courses

AMU 101 - Music Theory: Materials and Design I

Course Units: 1.0 This course is an introduction to concepts in music theory that enable musicians to analyze, compose, perform, and think more critically about the elements of music. Through academic inquiry and creative application, students will develop a deeper understanding of the materials that underpin music, including melody, harmony, voice leading, rhythm, texture, phrasing, and form. Students will gain insight into how composers design and construct music and then apply those techniques to their own composition assignments and projects. **Prerequisite(s):** Ability to read music or permission of the instructor. **CC:** HUM

AMU 201 - Music Theory: Materials and Design II

Course Units: AMU 201 delves deeper into melody, harmony, and voice leading, with a particular focus on modulation and chromaticism. This course touches on a broad spectrum of topics, including melodic phrasing, tonicization and modulation, chromatic voice leading, and an expanded harmonic vocabulary. Through the analysis of classical, jazz, and popular music, this course encourages students to explore and understand the application of these concepts in various musical genres. **Prerequisite(s):** AMU 101 or permission from the instructor. **CC:** HUM

AMU 301 - Music Theory: Materials and Design III

Course Units: 1 Through score analysis and composition, this course goes further into the characteristics that define common musical forms. Students explore concepts in texture, timbre, orchestration, and longer form composition. **Prerequisite(s):** AMU 201 **CC:** HUM

Three music history courses

Chosen from below:

AMU 212 - Bach, Handel, and their Predecessors

Course Units: 1.0 This course is a study of music composed between about 1600 and 1750. Among the topics that we explore are: recently discovered compositions by underrepresented figures such as Manuel del Surmaya of Mexico; works influenced by architecture; connections between various styles of opera and the modern-day musical; the impact of dance rhythms on vocal and instrumental music; and the role of improvisation on the one hand and strict counterpoint on the other in the development of music from the seventeenth and early eighteenth centuries. **CC:** HUM, HUL, LCC, WAC-R, JCAD, JCHF, JLIT, **ISP:** REL

AMU 213 - Haydn, Mozart and Beethoven

Course Units: 1.0 Vienna was the center of European art music from the late eighteenth century through the early nineteenth century. This course examines music by Haydn, Mozart, Beethoven, and underrepresented composers such as Joseph Bologne. A thread throughout the course is a discussion about class struggles as seen through the lives of the composers, as well as through a close examination of the classic opera The Marriage of Figaro. Students come to an understanding of Vienna at one of the city's greatest musical heights. **CC:** HUM, JCAD, JCHF, JLIT, WAC

AMU 214 - Romanticism

Course Units: 1.0 The nineteenth century witnessed the development of countless individual musical styles, as opposed to the more homogeneous sounds of previous generations. Through listening exercises, studies of texts and music, and historical documents, students learn to distinguish characteristics of music written by composers such as Chopin, Schubert, Clara and Robert Schumann, Felix and Fanny Mendelssohn, Bizet, Verdi, Wagner, Brahms, Ethel Smythe, Amy Beach, Coleridge-Taylor, Gottschalk, and others. **CC:** HUL, JCAD, JCHF, WAC **ISP:** REE

AMU 215 - Music in the 20th & 21st Centuries

Course Units: 1.0 The study of significant styles and developments in the music of the last hundred years (both "classical" and popular), approached through analysis, performance, and composition. **Prerequisite(s):** AMU 101or permission of the instructor. **CC:** HUM **ISP:** REE

AMU 340 - Early Music Seminar: Music of the Middle Ages and Renaissance

Course Units: 1.0 While distant in time, music of the Middle Ages and Renaissance resonates with modern times. Students learn how court musicians, monks, jongleurs, and others dealt with topics that still matter today - from love to war - only in different musical languages. Through individual analyses of texts and music, active listening exercises, classroom discussions, papers, performances, and projects, students explore the lives of people living between the ninth through the sixteenth centuries. **CC:** HUL, HUM, WAC, JCAD, JCHF, JLIT **ISP:** REL

A world music course

AMU 202 - Musical Thinking: World and Pop

Course Units: 1.0 This course will examine music traditions outside the canon of Western classical music, including American folk, jazz and popular music as well as traditional and popular music from around the world. In order to better understand the theory and practice of these music's, students will pursue topics including the dichotomy between oral tradition and written notation; various ways of organizing pitch, rhythm, and meter; and the process of transcription. **Prerequisite(s):** AMU 100 or AMU 101 or permission of the instructor. **CC:** HUM, LCC

AMU 220 - Mapping Musical Lives: Ethnography of Performing Arts

Course Units: 1.0 This seminar explores the relationship between music and culture through live performance, discussion, video and audio, and workshops in a variety of world music areas. Students will also consider how one conducts research on performing arts, culminating in a focused project on music-making in the community. Students thus will encounter diverse peoples and their musical practices in cross-cultural comparison while also exploring research methodology through their own work. **Cross-Listed:** ANT 274 **CC:** LCC, HUM, JCHF, JSPE, WAC-R **ISP:** REE

Three music electives

- Three music electives chosen in consultation with the student's departmental advisor.

Two term senior project

AMU 498 - Music Two Term Senior Project 1

Course Units: 0.0

AMU 499 - Music Two Term Senior Project 2

Course Units: 2.0 **Prerequisite(s):** AMU 498 **CC:** WS

Two years of practicum credit in faculty-led ensemble

Music Department Curriculum Beginning with the Class of 2026

Requirements for the Music Major:

Twelve Courses

FOUR HISTORICAL AND CULTURAL CONTEXT COURSES (HCC)

Chosen from two categories:

- Historical Musicology
- Global and Popular Musics

To be chosen from a list of approved courses.

At least one course must be outside of the primary area.

Historical Musicology

AMU 212 - Bach, Handel, and their Predecessors

Course Units: 1.0 This course is a study of music composed between about 1600 and 1750. Among the topics that we explore are: recently discovered compositions by underrepresented figures such as Manuel del Surmaya of Mexico; works influenced by architecture; connections between various styles of opera and the modern-day musical; the impact of dance rhythms on vocal and instrumental music; and the role of improvisation on the one hand and strict counterpoint on the other in the development of music from the seventeenth and early eighteenth centuries. **CC:** HUM, HUL, LCC, WAC-R, JCAD, JCHF, JLIT, **ISP:** REL

AMU 213 - Haydn, Mozart and Beethoven

Course Units: 1.0 Vienna was the center of European art music from the late eighteenth century through the early nineteenth century. This course examines music by Haydn, Mozart, Beethoven, and underrepresented composers such as Joseph Bologne. A thread throughout the course is a discussion about class struggles as seen through the lives of the composers, as well as through a close examination of the classic opera The Marriage of Figaro. Students come to an understanding of Vienna at one of the city's greatest musical heights. **CC:** HUM, JCAD, JCHF, JLIT, WAC

AMU 214 - Romanticism

Course Units: 1.0 The nineteenth century witnessed the development of countless individual musical styles, as opposed to the more homogeneous sounds of previous generations. Through listening exercises, studies of texts and music, and historical documents, students learn to distinguish characteristics of music written by composers such as Chopin,

Schubert, Clara and Robert Schumann, Felix and Fanny Mendelssohn, Bizet, Verdi, Wagner, Brahms, Ethel Smythe, Amy Beach, Coleridge-Taylor, Gottschalk, and others. **CC:** HUL, JCAD, JCHF, WAC **ISP:** REE

AMU 215 - Music in the 20th & 21st Centuries

Course Units: 1.0 The study of significant styles and developments in the music of the last hundred years (both "classical" and popular), approached through analysis, performance, and composition. **Prerequisite(s):** AMU 101or permission of the instructor. **CC:** HUM **ISP:** REE

AMU 340 - Early Music Seminar: Music of the Middle Ages and Renaissance

Course Units: 1.0 While distant in time, music of the Middle Ages and Renaissance resonates with modern times. Students learn how court musicians, monks, jongleurs, and others dealt with topics that still matter today - from love to war - only in different musical languages. Through individual analyses of texts and music, active listening exercises, classroom discussions, papers, performances, and projects, students explore the lives of people living between the ninth through the sixteenth centuries. **CC:** HUL, HUM, WAC, JCAD, JCHF, JLIT **ISP:** REL

Global and Popular Musics

AMU 120 - Making Music, Shaping Selves: Introduction to World Music

Course Units: 1.0 Introduces music from various world areas including Africa, Latin America, Asia, and Europe through live performance, lecture, video and audio. Students will increase familiarity with a wide range of musical styles while also exploring the relationship between music, identity and society. **Cross-Listed:** ANT 148 **CC:** LCC, HUM

AMU 131 - Music of Black America

Course Units: 1.0 Black music in America from its African beginnings to present-day pop styles, approached through live performance, lecture, video, and sound recordings. Special emphasis on gospel, blues, jazz, and rap. **Prereq/Corequisite(s):** Not open to students who have taken AMU 132. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AFR, AMS

AMU 132 - The History of Jazz

Course Units: 1.0 A study of the important personalities and trends in the evolution of jazz, approached through reading, video and sound recordings, and live performance. **Prereq/Corequisite(s):** Not open to students who have taken AMU 131. **CC:** LCC, HUM **ISP:** AFR, AMS

AMU 133 - Music of Latin America

Course Units: 1.0 Latin American music-cultures approached through live performance, lecture, video, and audio. Survey samples from folk, popular, and classical traditions, with special emphasis on the musics of Cuba and Brazil. **CC:** LCC, HUM **ISP:** AFR, LAS

AMU 134 - Music and Culture of Africa

Course Units: 1.0 Through an examination of traditional and popular music from across the continent, students will gain a better understanding of the integral role played by music in African culture. **CC:** LCC, HUM, JCAD, JCHF **ISP:** AFR

AMU 220 - Mapping Musical Lives: Ethnography of Performing Arts

Course Units: 1.0 This seminar explores the relationship between music and culture through live performance, discussion, video and audio, and workshops in a variety of world music areas. Students will also consider how one conducts research on performing arts, culminating in a focused project on music-making in the community. Students thus will encounter diverse peoples and their musical practices in cross-cultural comparison while also exploring research methodology through their own work. **Cross-Listed:** ANT 274 **CC:** LCC, HUM, JCHF, JSPE, WAC-R **ISP:** REE

AMU 221 - From Rhythm and Blues to Radiohead: The History of Rock & Roll

Course Units: 1.0 Explores the historical development of Anglo-American rock-and-roll through lecture, video and sound recordings. This course will rely heavily on film, with an accompanying series featuring documentaries, concert films, musicals and more. Students will gain a greater understanding of the socio-cultural contexts that informed stylistic change, as well as consider the continued relevance of rock today. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, JCHF, JCAD, WAC **ISP:** AMS, GSWS

AMU 223 - Global Hip Hop

Course Units: 1 Hip hop has grown from its late 1970s NYC roots to become a vehicle for self-expression around the globe. After introductory topics including the basics of music, an overview of the music industry, and the roots of hip hop, the course will examine case studies in global hip hop culture. **CC:** HUM, WAC-R, JCAD, JCHF **ISP:** AFR

AMU 225 - Music as Activism

Course Units: 1 From Green Day's iconic American Idiot (2004) to the strumming of Middle Eastern lutes in Afghani refugee camps-music is an integral means of expressing individual and collective identity, critiquing injustice, and inspiring action. This course explores what forms such activism take and how music and the arts increase awareness of real social and environmental problems and potentially help resolve conflicts. Both through theoretical arguments and concrete case studies, we will see that music-and the individuals who make it-are able to enact real positive social change. **CC:** HUM, JCHF, JSPE, WAC-R

AMU 235 - Latin Percussion Workshop

Course Units: 1.0 The goal of this course is to give students an in-depth understanding of Afro-Cuban and Afro-Brazilian music through studying genres (rumba, son, mambo, salsa, comparsa, samba, forro) from inside the percussion section. In addition to ensemble work, students will research and transcribe Latin music styles. The course will culminate in a public performance/presentation at the end of the term. Entry to the course by audition; previous instrumental experience desirable but not required. **CC:** LCC, JCAD, JCHF **ISP:** AFR, LAS

AMU 306 - The Evolution of Popular Song

Course Units: 1.0 From minstrelsy and vaudeville through Tin Pan Alley, Motown, the Beatles, Burt Bacharach, Billy Joel, and Taylor Swift, this course will examine the creation, performance, transmission, and reception of popular song. In addition to analyzing lyrical/musical content as well as historical context, students will compose words and music in the styles of established master songwriters. **Prerequisite(s):** AMU 101 or permission of the instructor. **CC:** HUM

AMU 307 - The Art and Music of Radiohead

Course Units: 1.0 Course Units: 1.0 This course focuses on the music and art of seminal rock group Radiohead. Formed in the 1980s in Oxfordshire, UK, Radiohead has released nine critically acclaimed studio albums and more than 40 music videos, topping thecharts for decades, and rivaling The Beatles for a top spot in the pantheon of British rock legends. They are widely respected not only for their musical innovation, involving creative modality and rhythmic organization but their ecological mindfulness, political edginess and industry changing approaches to the production of popular music, ever critical of consumer capitalism. This combination has allowed the group to maintain creative autonomy and authenticity, while garnering worldwide recognitionand commercial success. The group's emergence from British synth-pop and evolution to contemporary icons will be explored
through reading, listening, musical analysis, and video. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, GCHF, GCAD, GLIT, WAC

AMU 320 - Encounters with East Asian Music Cultures

Course Units: 1.0 Through live performance, discussion, and composition, this course explores key characteristics of East Asian Music Cultures. Particular attention is paid to the processes of cultural exchange between China, Korea, Japan and the rest of the world that have resulted in the rich breadth of performance traditions expressed today. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AIS, GSW

AMU 325 - Music, Community Engagement, and Sustainable Instruments: A Service-Learning Course

Course Units: 1 Music, Civic Engagement, and Sustainable Instruments is a service learning course that allows students to engage with the local Schenectady community by partnering with the Mont Pleasant Middle School 21st Century Afterschool Program; explore sustainable design, such as upcycling found objects into new sound producing instruments or related artistic objects; and collectively explore and expand your own ability to enact positive social change through your academic pursuits and beyond. **CC:** HUM, GCHF, GCAD, GSPE

THREE COURSES IN MUSICAL LITERACY (ML)

AMU 101 - Music Theory: Materials and Design I

Course Units: 1.0 This course is an introduction to concepts in music theory that enable musicians to analyze, compose, perform, and think more critically about the elements of music. Through academic inquiry and creative application, students will develop a deeper understanding of the materials that underpin music, including melody, harmony, voice leading, rhythm, texture, phrasing, and form. Students will gain insight into how composers design and construct music and then apply those techniques to their own composition assignments and projects. **Prerequisite(s):** Ability to read music or permission of the instructor. **CC:** HUM

AMU 201 - Music Theory: Materials and Design II

Course Units: AMU 201 delves deeper into melody, harmony, and voice leading, with a particular focus on modulation and chromaticism. This course touches on a broad spectrum of topics, including melodic phrasing, tonicization and modulation, chromatic voice leading, and an expanded harmonic vocabulary. Through the analysis of classical, jazz, and popular music, this course encourages students to explore and understand the application of these concepts in various musical genres. **Prerequisite(s):** AMU 101 or permission from the instructor. **CC:** HUM

Plus one additional ML course chosen from below.

AMU 100 - Elements of Music

Course Units: 1.0 An introductory survey of the main aspects of music theory and practice including rhythm, intervals, scales and keys, melody, harmony, and form, complemented by hands-on creative work in the Music Technology Studio. Designed for students with a minimal background in music **CC:** HUM

AMU 110 - Class Piano 1

Course Units: 1.0 This course, aimed at students with no experience in piano playing, integrates basics of music theory with learning to play the piano. Students will first learn to read treble and bass clefs at the keyboard and then come to an understanding of keys and basic harmonic principles while learning to play music from a variety of repertoires. **CC:** HUM

AMU 111 - Class Piano 2

Course Units: 1.0 A continuation of Class Piano I. Students learn to perform intermediate-level piano works from classical and popular music repertoires, develop sight reading skills, and learn to harmonize melodies with more than three chords. **Prerequisite(s):** AMU 110 or permission of the instructor. **CC:** HUM

AMU 202 - Musical Thinking: World and Pop

Course Units: 1.0 This course will examine music traditions outside the canon of Western classical music, including American folk, jazz and popular music as well as traditional and popular music from around the world. In order to better understand the theory and practice of these music's, students will pursue topics including the dichotomy between oral tradition and written notation; various ways of organizing pitch, rhythm, and meter; and the process of transcription. **Prerequisite(s):** AMU 100 or AMU 101 or permission of the instructor. **CC:** HUM, LCC

AMU 301 - Music Theory: Materials and Design III

Course Units: 1 Through score analysis and composition, this course goes further into the characteristics that define common musical forms. Students explore concepts in texture, timbre, orchestration, and longer form composition. **Prerequisite(s):** AMU 201 **CC:** HUM

AMU 304 - Composition and Performance Projects

Course Units: 1.0 The creation and notation of freestyle compositions with emphasis on individual instruction. **Prerequisite(s):** AMU 201 or permission from the instructor. **CC:** HUM

ONE TECHNOLOGY COURSE

Chosen from below

AMU 140 - Music Technology I: Transforming Sound, Making Music

Course Units: 1.0 An introduction to the tools and techniques of organizing sound in meaningful ways using computers. Students learn basic recording techniques, audio editing, mixing, sequencing, synthetic sound design, and basic compositional techniques in order to facilitate the creation of original, brief compositions.

AMU 240 - Music Technology II: Recording and Mixing Sound

Course Units: 1 This course focuses on the hardware and software tools, techniques, and practices necessary to produce polished pieces of music. Through both technical and creative projects, students dive deeper into concepts from acoustics and psychoacoustics, microphone placement and selection, recording practices, signal routing, sound processing and mixing, and synthesizer programming. **CC:** HUM

ONE CREATIVITY COURSE

Chosen from below

AMU 202 - Musical Thinking: World and Pop

Course Units: 1.0 This course will examine music traditions outside the canon of Western classical music, including American folk, jazz and popular music as well as traditional and popular music from around the world. In order to better understand the theory and practice of these music's, students will pursue topics including the dichotomy between oral tradition and written notation; various ways of organizing pitch, rhythm, and meter; and the process of transcription. **Prerequisite(s):** AMU 100 or AMU 101 or permission of the instructor. **CC:** HUM, LCC

AMU 215 - Music in the 20th & 21st Centuries

Course Units: 1.0 The study of significant styles and developments in the music of the last hundred years (both "classical" and popular), approached through analysis, performance, and composition. **Prerequisite(s):** AMU 101or permission of the instructor. **CC:** HUM **ISP:** REE

AMU 221 - From Rhythm and Blues to Radiohead: The History of Rock & Roll

Course Units: 1.0 Explores the historical development of Anglo-American rock-and-roll through lecture, video and sound recordings. This course will rely heavily on film, with an accompanying series featuring documentaries, concert films, musicals and more. Students will gain a greater understanding of the socio-cultural contexts that informed stylistic change, as well as consider the continued relevance of rock today. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, JCHF, JCAD, WAC **ISP:** AMS, GSWS

AMU 232 - Jazz Workshop

Course Units: 1.0 Students will perform, analyze, and compose music written in jazz idioms; students will develop skills in improvisation. **CC:** HUM

AMU 233 - Japanese Drumming Workshop

Course Units: 1.0 This course introduces Japanese drumming, exploring its origins and subsequent development as a national art form following WWII, and then its ultimate spread globally as a voice of Asian-American activism. The course emphasizes performance on the drums and culminates in a final concert and performance project. No previous musical experience is required. **CC:** LCC, HUM, JCAD, JCHF, JSPE **ISP:** AIS, GSW

AMU 234 - Balinese Gamelan Workshop

Course Units: 1.0 This course introduces Balinese music and culture, exploring the importance of music, dance, and religion in the everyday life of Balinese people. The course emphasizes performance of Balinese gong kebyar (an orchestral form featuring xylophones, gongs, drums, and cymbals) and culminates in a final concert and performance protest. No previous musical experience is required. **CC:** LCC, HUM **ISP:** AIS

AMU 240 - Music Technology II: Recording and Mixing Sound

Course Units: 1 This course focuses on the hardware and software tools, techniques, and practices necessary to produce polished pieces of music. Through both technical and creative projects, students dive deeper into concepts from acoustics and psychoacoustics, microphone placement and selection, recording practices, signal routing, sound processing and mixing, and synthesizer programming. **CC:** HUM

AMU 301 - Music Theory: Materials and Design III

Course Units: 1 Through score analysis and composition, this course goes further into the characteristics that define common musical forms. Students explore concepts in texture, timbre, orchestration, and longer form composition. **Prerequisite(s):** AMU 201 **CC:** HUM

AMU 303 - Conducting

Course Units: 1.0 Fundamentals of conducting vocal and instrumental ensembles, including score reading and preparation, beat patterns, gestures, and rehearsal techniques. **Prerequisite(s):** permission of the instructor. **CC:** HUM

AMU 304 - Composition and Performance Projects

Course Units: 1.0 The creation and notation of freestyle compositions with emphasis on individual instruction. **Prerequisite(s):** AMU 201 or permission from the instructor. **CC:** HUM

AMU 305 - Vocal Arranging

Course Units: 1.0 Writing and arranging for the voice, in folk, classical, jazz, and popular contexts. **Prerequisite(s):** AMU 101 or permission of the instructor. **CC:** HUM

AMU 306 - The Evolution of Popular Song

Course Units: 1.0 From minstrelsy and vaudeville through Tin Pan Alley, Motown, the Beatles, Burt Bacharach, Billy Joel, and Taylor Swift, this course will examine the creation, performance, transmission, and reception of popular song. In addition to analyzing lyrical/musical content as well as historical context, students will compose words and music in the styles of established master songwriters. **Prerequisite(s):** AMU 101 or permission of the instructor. **CC:** HUM

AMU 307 - The Art and Music of Radiohead

Course Units: 1.0 Course Units: 1.0 This course focuses on the music and art of seminal rock group Radiohead. Formed in the 1980s in Oxfordshire, UK, Radiohead has released nine critically acclaimed studio albums and more than 40 music videos, topping thecharts for decades, and rivaling The Beatles for a top spot in the pantheon of British rock legends. They are widely respected not only for their musical innovation, involving creative modality and rhythmic organization but their ecological mindfulness, political edginess and industry changing approaches to the production of popular music, ever critical of consumer capitalism. This combination has allowed the group to maintain creative autonomy and authenticity, while garnering worldwide recognitionand commercial success. The group's emergence from British synth-pop and evolution to contemporary icons will be explored
through reading, listening, musical analysis, and video. **Prerequisite(s):** Permission of the instructor. **CC:** HUM, GCHF, GCAD, GLIT, WAC

AMU 320 - Encounters with East Asian Music Cultures

Course Units: 1.0 Through live performance, discussion, and composition, this course explores key characteristics of East Asian Music Cultures. Particular attention is paid to the processes of cultural exchange between China, Korea, Japan and the rest of the world that have resulted in the rich breadth of performance traditions expressed today. **CC:** LCC, HUM, JCAD, JCHF, WAC **ISP:** AIS, GSW

AMU 325 - Music, Community Engagement, and Sustainable Instruments: A Service-Learning Course

Course Units: 1 Music, Civic Engagement, and Sustainable Instruments is a service learning course that allows students to engage with the local Schenectady community by partnering with the Mont Pleasant Middle School 21st Century Afterschool Program; explore sustainable design, such as upcycling found objects into new sound producing instruments or related artistic objects; and collectively explore and expand your own ability to enact positive social change through your academic pursuits and beyond. **CC:** HUM, GCHF, GCAD, GSPE

ONE PERFORMANCE COURSE

Chosen from below

AMU 230 - Musical Theater & Opera Scenes Workshop

Course Units: 1.0 This class aims to help students discover their potential for singing, acting, and dancing through the performance of scenes from the opera and musical theater literature. Special emphasis will be given to the improvement of sight-reading. Through a combination of lecture and hands-on performance, students will also learn to understand the basics of voice types, vocal technique, and other performance-related issues in the field. Guest speakers and instructors will be invited to share their experiences with students to further their understanding of the vocal performance industry. **CC:** HUM **ISP:** AMS

AMU 231 - Chamber Music Workshop

Course Units: 1.0 Rehearsal and performance of chamber music primarily from Classical and Romantic periods. **CC:** HUM

AMU 232 - Jazz Workshop

Course Units: 1.0 Students will perform, analyze, and compose music written in jazz idioms; students will develop skills in improvisation. **CC:** HUM

AMU 233 - Japanese Drumming Workshop

Course Units: 1.0 This course introduces Japanese drumming, exploring its origins and subsequent development as a national art form following WWII, and then its ultimate spread globally as a voice of Asian-American activism. The course emphasizes performance on the drums and culminates in a final concert and performance project. No previous musical experience is required. **CC:** LCC, HUM, JCAD, JCHF, JSPE **ISP:** AIS, GSW

AMU 234 - Balinese Gamelan Workshop

Course Units: 1.0 This course introduces Balinese music and culture, exploring the importance of music, dance, and religion in the everyday life of Balinese people. The course emphasizes performance of Balinese gong kebyar (an orchestral form featuring xylophones, gongs, drums, and cymbals) and culminates in a final concert and performance protest. No previous musical experience is required. **CC:** LCC, HUM **ISP:** AIS

AMU 235 - Latin Percussion Workshop

Course Units: 1.0 The goal of this course is to give students an in-depth understanding of Afro-Cuban and Afro-Brazilian music through studying genres (rumba, son, mambo, salsa, comparsa, samba, forro) from inside the percussion section. In addition to ensemble work, students will research and transcribe Latin music styles. The course will culminate in a public performance/presentation at the end of the term. Entry to the course by audition; previous instrumental experience desirable but not required. **CC:** LCC, JCAD, JCHF **ISP:** AFR, LAS

AMU 303 - Conducting

Course Units: 1.0 Fundamentals of conducting vocal and instrumental ensembles, including score reading and preparation, beat patterns, gestures, and rehearsal techniques. **Prerequisite(s):** permission of the instructor. **CC:** HUM

AMU 340 - Early Music Seminar: Music of the Middle Ages and Renaissance

Course Units: 1.0 While distant in time, music of the Middle Ages and Renaissance resonates with modern times. Students learn how court musicians, monks, jongleurs, and others dealt with topics that still matter today - from love to war - only in different musical languages. Through individual analyses of texts and music, active listening exercises, classroom discussions, papers, performances, and projects, students explore the lives of people living between the ninth through the sixteenth centuries. **CC:** HUL, HUM, WAC, JCAD, JCHF, JLIT **ISP:** REL

Two term senior project

AMU 498 - Music Two Term Senior Project 1

Course Units: 0.0

AMU 499 - Music Two Term Senior Project 2

Course Units: 2.0 **Prerequisite(s):** AMU 498 **CC:** WS

Two years of practicum credit in faculty-led ensemble

Requirements for Honors in Music:

To be eligible for departmental honors, a student must fulfill the following requirements: (1) a minimum index of 3.3 in music; (2) for full Majors: a grade of "A minus" or better in a two-term senior project in composition, performance, research, or analysis (AMU 498-AMU 499); for Interdepartmental Majors: a grade of "A minus" or better in a one-term senior project in composition, performance, research, or analysis (AMU 497). In addition, the student must satisfy College requirements for departmental honors.

Course Selection Guidelines:

Students are required to consult their music faculty advisors when choosing electives. Concentrations are available in composition, music history, music technology, performance, and ethnomusicology. All students should plan to complete the 100- and 200-level music theory sequence early in their music studies. AMU 301 Music Theory: Materials and Design III is strongly recommended as a capstone theory course for students specializing in composition,

performance, or music history. The department values performance as an essential component of musical training. The list of ensembles follows the music course descriptions.

In addition to regular coursework, students may work with individual faculty in independent studies on special topics. These could include conducting, composition, counterpoint, community-based internships, and technology. Please consult your advisor or the Chair of the Music Department for further information.

Nanotechnology

Directors: Professors R. Cortez (Mechanical Engineering), Y. Stehle (Mechanical Engineering)

Nanotechnology Minor

The interdisciplinary minor in nanotechnology is primarily aimed at science and engineering majors who wish to become more aware of the properties of matter at the nanoscale, the potential usefulness of those properties, and their social and economic implications. It will also appeal to students interested in science and technology policy who wish to expand their knowledge of science and technology.

Requirements for the minor:

1. Required courses for all minors (Three courses):

CHM 224 - Frontiers of Nanotechnology and Nanomaterials

Course Units: 1.0 An overview of nanotechnology and nanomaterials including interdisciplinary perspectives from engineering, materials science, chemistry, physics, and biology with an emphasis on how applications (sensors, energy materials, nanocomposites, and biomaterials) can be used to solve global challenges. **Cross-Listed:** ESC 224 **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121;MTH 112 ; and CHM 101 or CHM 110H ; or permission of instructor. **CC:** SET, GETS

ESC 324 - Advanced Topics in Nanoscience

Course Units: 1.0 In-depth coverage of micro and nanoscale microscopy, including scanning electron microscopy and atomic force microscopy and their related modes and diagnostics methods. The course will feature special topics in nanoscience/nanotechnology, such as nanochemistry and structure/property relationships in select nanomaterial systems and/or biological nanomachines, self-assembly of bionanomaterials, and use of nanomaterials for biological sensors. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 ; MTH 115; and CHM 101 or CHM 110; CHM 224 or ESC 224 or MER 213 ; or permission of instructor. **CC:** SET, GETS

MER 213 - Material Science

Course Units: 1.0 A basic engineering science course dealing with crystal structure, imperfections in solids, diffusion, mechanical properties of metals, dislocations and strengthening mechanisms, phase diagrams, phase transformations in metals, structure and properties of ceramics, and polymeric structures. The principles formulated in materials science allow engineers to understand the nature and behavior of a wide variety of engineering materials. Includes a laboratory component. **Prerequisite(s):** CHM 101

2. Elective physical science course:

Any course outside of the student's major department that counts toward that department's major.

3. Elective Social Science or Humanities course:

Any social science or humanities course that focuses on science, technology, and society. Consult with program directors for list of acceptable courses.

4. The student's senior writing, research, or design project should involve elements of nanoscience or nanotechnology.

This senior project should be approved by one of the Nanotechnology program directors.

Neuroscience

Directors: Professors Q. Chu-LaGraff (Biological Sciences), C. Anderson-Hanley (Psychology)
Faculty: Professors L. Fleishman (Biological Sciences), D. Burns, C. Weisse (Psychology); Associate Professors S. Kirkton (Biological Sciences), C. Fernandes, K. Striegnitz, J. Rieffel, N. Webb (Computer Science), T. Buma (Electrical and Computer Engineering), J. Wang (Mathematics), S. Romero (Psychology); Assistant Professors M. Bergamaschi-Ganapini (Philosophy), C. Rogers (Psychology); Visiting Assistant Professor E. Egan (Psychology); Senior Lecturer B. Cohen (Biological Sciences)

The major in neuroscience is designed for students with interests that intersect the fields of biology, psychology, and computer science. Neuroscience focuses on the relationships among brain function, information processing, and behavior. Researchers in this field come from widely disparate backgrounds, including cognitive psychology, clinical neuropsychology, neuroimaging, neurobiology, molecular biology, genetics, neuroethology, biopsychology, physiology, neurology, psychiatry, philosophy, and computer science. Thus, research questions are considered from many different levels, and many different converging methodologies are used.

Neuroscience Minor

Due to significant curricular overlap, **Biology or Psychology majors are not allowed to minor in Neuroscience. Similarly, Neuroscience majors are not allowed to minor in Biology**. They may be allowed to minor in Psychology but only under these conditions:

A. Psychology chair approval

B. All requirements must be fulfilled (including PSY 100, which is otherwise not required of NS majors)

C. No credits used to satisfy NS requirements may be used to satisfy Psychology requirements (i.e., no double-counting).

For all other majors interested in minoring in Neuroscience: BIO 242 is required in addition to four courses selected from the list below. These courses must be from three different departments. For Computer Science majors, only one of these courses can be double counted.

Requirements for the Minor:

BIO 205 - Topics in Molecular Biology

Course Units: 1.0 In this sophomore level course, students will learn the key concepts of the molecular biology of the cell as well as how to integrate the principles of cell structure and function with the underlying molecular mechanism(s). Discussions will focus on gene structure, mechanisms of replication, transcription and translation, mutation and DNA repair, gene regulations, and genomics. Each of these concepts will be discussed in the context of a unifying theme selected by the instructor. Possible examples of these themes include viruses, epigenetics, human diseases, biotechnology and artificial organisms, cell fate determination and differentiation. **Prerequisite(s):** BIO 103 and BIO 104 . **CC:** SET **Note:** May not be taken simultaneously with BIO 206.

BIO 325 - Animal Behavior w/lab

Course Units: 1.0 An introduction to the study of animal behavior. The mechanisms and evolutionary processes underlying animal behavior under natural conditions will be examined. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 325L **CC:** SET **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 350 - Evolutionary Biology w/lab

Course Units: 1.0 Major concepts and mechanisms of biological evolution, including history of life, population genetics, molecular evolution, Darwinian medicine, and an emphasis on the processes of speciation. **Prerequisite(s):** BIO 103 and BIO 104 or permission of the instructor. **Corequisite(s):** BIO-350L **CC:** SET **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 362 - Experimental Neurobiology w/lab

Course Units: 1.0 This course provides an overview of biological function of animal nervous systems, with an emphasis on specific experimental methods and primary literature underlying this knowledge. Topics include ionic basis of actions potentials, electrophysiology, sensory and motor systems, brain-machine interfaces and the neural basis of animal behavior and navigation. Inquiry-based laboratory exercises include basic techniques in electrophysiology recording and stimulation, fine dissection, fluorescent labeling of neural cells, as well as data analysis, presentation and communication (writing intensive). **Cross-Listed:** PSY 312 **Prerequisite(s):** BIO 205 and either BIO 206 or BIO 242 . **Corequisite(s):** BIO 362L **CC:** SET **Lecture/Lab Hours** One lab per week.

BIO 370 - Endocrinology

Course Units: 1.0 Principles of endocrine and neuroendocrine regulation of physiological processes, concentrating on metabolism, growth, and reproduction. **Prerequisite(s):** BIO 205 **CC:** SET

BIO 384 - Genetics and Molecular Biology w/lab

Course Units: 1.0 The use of both classical genetics and molecular biology as experimental tools is currently being applied to an extremely diverse array of questions in biology. This course will expose the student to many of the commonly-used techniques in the "toolkit" of the geneticist/molecular biologist. Emphasis will be on recent advances in our understanding of topics of current interest such as development, cellular response to environmental stimuli, tumor formation, human genetic disease, circadian rhythms, and mammalian sex determination, amongst others. Laboratory will emphasize the use of modern molecular biological techniques and will involve group projects of the students' choice. **Prerequisite(s):** BIO 205 and CHM 102 or CHM 110H **Corequisite(s):** BIO 384L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 206 - Text Analytics

Course Units: 1.0 This course introduces computational techniques for extracting information from unstructured text. This includes reading in different types of text, preparing text for further processing, summarizing and visualizing basic descriptive statistics, as well as applications, such as sentiment analysis, information retrieval, information extraction, summarization, and topic modeling. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 **CC:** SET

CSC 234 - Data Visualization

Course Units: 1.0 Data has a story which has to be told! Data visualization is all around us, in print and in electronic media. Some of it is accurate and effective, while some is extremely unclear, confusing, or misleading. In this course we will study various approaches to information visualization and associated data analysis techniques. How do we take a lot of data, or very complex data, and present it in ways that allow it to communicate information clearly and effectively? The course will explore applications from science, medicine, social science, and humanities. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 . **CC:** SET

CSC 235 - Modeling & Simulation

Course Units: 1.0 This course will study modeling and simulation as they occur in and apply to a number of different disciplines. It will cover system dynamics models which address major systems that change with time, and cellular automaton simulations that look more narrowly at individuals affecting individuals. Other topics will include rate of change, errors, simulation techniques, empirical modeling, and an introduction to high performance computing. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 **CC:** SET

CSC 243 - Bioinformatics: Information Technology in the Life Sciences

Course Units: 1.0 Biology and computer science students will gain a working knowledge of the basic principles of the others' discipline, and will collaborate together on bioinformatics projects. Topics include pairwise and multiple sequence alignments, phylogenetic trees, gene expression analysis, and protein structure prediction. Additional topics will be presented by invited speakers. **Cross-Listed:** BIO 243 **Prerequisite(s):** BIO-205 **or** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 ,or CSC 108 . **CC:** SET **ISP:** STS

CSC 320 - Artificial Intelligence

Course Units: 1.0 Fundamental concepts used in creating "intelligent" computer systems; semantic representation, logical deduction, natural language processing, and game playing; expert systems, knowledge-based systems, and elementary robotics. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . Recommended: CSC 250 . MTH 199 can be substituted for MTH 197

CSC 321 - Data Mining and Machine Learning

Course Units: 1.0 Introduces Data Mining, where previously unknown and potentially useful information is automatically extracted from data sources, using regularities or patterns of implicit information. Such patterns can be used to make predictions over future data, and be used to explain and understand the nature of that data. Machine Learning is one mechanism by which data mining is achieved. It is used to discover and extract information from raw data. This course will cover tools and techniques of machine learning that are used in practical data mining. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 325 - Robotics

Course Units: 1.0 The course will cover basic algorithms necessary for motor control. Building on these methods we will discuss higher level navigation for mobile robots, as well as the sensing necessary for localization of the robot in its environment. Finally, we will also examine the challenges of motion planning for jointed robots with many degrees of freedom. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 329 - Neural Networks

Course Units: 1.0 **(TBD: Staff) Cross-Listed:** ECE 329

PHL 265 - Minds and Machines

Course Units: 1.0 Is it possible to build a computer that effectively simulates human intelligence? If we did so, would the computer really be intelligent, or would it merely seem to be: Would the computer have free will? Do we have free will, or is human freedom merely an illusion? Do we have immaterial souls that can survive the deaths of our bodies and brains? In this advanced introduction to the philosophy of mind, we will consider these and other questions about what it means to have a mind, and about the relationship between mind and the brain. **CC:** HUM **ISP:** STS

PHL 462 - Philosophy of Language

Course Units: 1.0 An examination of key concepts in the philosophy of language, such as truth, meaning, reference, definite descriptions, names, demonstratives, and propositional attitudes. The fundamental question: How does language connect us to the world? **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM, WS

PSY 200 - Statistical Methods in Psychology

Course Units: 1.0 The descriptive and inferential statistical procedures used by researchers to explain and analyze their results. Mean, variance, correlation, hypothesis testing using t-test, ANOVA, and nonparametric tests. **Prerequisite(s):** PSY 100 , PSY 210 / BIO 210 or (BIO 103 and BIO 104) **ISP:** ENS

PSY 210 - Neuroscience: Mind & Behavior

Course Units: 1.0 Basic concepts of brain functioning as they relate to psychological phenomena. Including methodology, neuroanatomy, and neurotransmission, important for understanding the mediation of behavior. **Cross-Listed:** BIO 210 **Prerequisite(s):** PSY 100 or (BIO 103 and BIO 104) **CC:** SET **ISP:** STS

PSY 213 - Clinical Neuropsychology

Course Units: 1.0 This course will examine the relationship between brain function and behavior, especially the evaluation and treatment of individuals across the lifespan who have cognitive deficits and brain compromise (e.g., due to injury, neurodevelopmental or degenerative processes, toxic exposure, etc.). The material is interdisciplinary, integrating across various sub-disciplines of medicine (e.g., neurology, psychiatry, radiology) and subfields of psychology (e.g. neuroscience, clinical disorders, assessment, cognitive, health). Clinical cases and research reports will be used to illustrate and characterize neuropsychological phenomena, conditions, and diagnoses. The course objectives will be accomplished through lecture, readings, discussion, guest speakers, and experiential activities (e.g., clinical interview, test administration, field experience, etc.). **Prerequisite(s):** PSY 100 or PSY 210 or BIO 210 or instructor permission

PSY 220 - Attention and Memory

Course Units: 1.0 This course will focus on how people take in information about the world around them, store that information, and retrieve it to help them solve problems. In doing so, we will discuss the seemingly paradoxical conclusion that we take in and interpret a great deal of our environment but that we also fail to notice much of it. We will also discuss how we are able to work on and manipulate the information we have taken in, and make decisions based on it, emphasizing the impact that this process has on our ability to perform many cognitive tasks. Additionally, those factors that influence how and how well we encode and later retrieve various types of information will be considered. **Prerequisite(s):** PSY 100 or (BIO 103 and BIO 104)

PSY 225 - The Psychology of Language

Course Units: 1.0 This course will present a broad overview of language and its instantiation within the human brain. We will pay particular attention to 1) the ways that neurological disorders impact language functioning, and 2) how these patterns of language breakdown inform psychological models of typical language processing. This course will cover basic anatomy as well as a survey of language related topics (e.g., speech perception, deafness, language acquisition, linguistic diversity). **Prerequisite(s):** PSY 100

PSY 310 - Cognitive Neuroscience

Course Units: 1.0 This course will present in depth the present understanding of the brain mechanisms that give rise to many mental processes, including attention, memory, language production, and comprehension, numerical processing, reasoning, emotions, and executive functioning. Weekly laboratory sessions will cover major methodologies used in cognitive neuroscience, including brain imaging and neural network simulation. **Prerequisite(s):** (PSY 210 or BIO 210) and PSY 220 and PSY 300 **Corequisite(s):** PSY 310L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week.

PSY 313 - Sensation and Perception

Course Units: 1.0 The study of sensation and perception examines the physics of the real world (stimulus), how the nervous system captures information about the environment (sensation), and the translation of sensory information into meaningful events (perception). Multiple levels of analysis will be introduced including sensory physiology, psychophysiology, and psychophysics. The class will cover a variety of topics, possibly to include how the eye is not a camera, why people need glasses, how 3-D movies work, the mysteries of face blindness, and what's hiding behind your eardrum. **Prerequisite(s):** (PSY 210 or BIO 210) and PSY 300 **Corequisite(s):** PSY 313L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

Neuroscience, B.S.

The neuroscience major consists of three tracks: The Bioscience track, the Cognitive track, and the Computational track.

- The *Bioscience* track focuses on the biological basis of neural development, function, and plasticity. Students will develop an understanding of the nervous system and its role in cognition, perception, and action at the molecular, cellular, and systems level.

- The *Cognitive* track provides students with an understanding of how neural networks and brain mechanisms give rise to specific mental processes and behavior. Students begin with the processes that have been traditionally studied in the area of cognitive psychology, but can tailor the program to include phenomena that are traditionally studied in developmental or clinical psychology as well.

- The *Computational* track focuses on issues related to developing computational models of neuronal and mental processes. Students will develop an understanding of artificial intelligence that uses biologically plausible methods.

Requirements for the Major:

The neuroscience major consists of four parts: (1) a core of required courses that all majors must take; (2) required courses in one of three tracks - bioscience, cognitive, or computational; (3) a general elective; (4) a senior writing requirement. Unless noted below, course descriptions are listed under their home departments. It is not possible to be an interdepartmental major in Neuroscience.

1. Required courses for all neuroscience majors:

Take the following required courses:

BIO 103 - Diversity of Life: Heredity, Evolution, and Ecology

Course Units: 1.0 More than 3.5 billion years of evolution have resulted in the astonishing diversity of life on earth. This course will explore biodiversity through the lens of ecology, evolution, and heredity, and will investigate various topics, including: the history of life on Earth, evolutionary change, Mendelian & non-Mendelian inheritance, as well as human impacts on biodiversity and ecological functioning. These processes will be studied in the lab using animal model systems, computer simulations, observations of diversity, and molecular techniques. Students will learn experimental design, data analysis, scientific writing, and various laboratory skills during weekly lab sessions. **Corequisite(s):** BIO 103L **CC:** SCLB, GNPS **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 104. **ISP:** ENS

BIO 104 - Cellular Foundations of Life

Course Units: 1.0 The cell is the basic unit of life. From single-celled to multicellular organisms, the cell must transform energy to survive, interact with its environment and reproduce itself. Different types of cells have different functions, and those specialized functions are exhibited in the signals they send and receive, the genes they express and ultimately the biochemical reactions they regulate. Thus, the arrangement and actions of biologically important molecules organize into functioning cellular systems and work together to carry out these important life processes. Required weekly laboratory sessions will introduce students to important tools and methods used by biologists and employ them to investigate biochemical and cellular processes and develop skills with scientific investigation including

distinguishing theories and hypotheses, generating and testing hypotheses and analyzing data. **Corequisite(s):** BIO 104L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week. May not be taken simultaneously with BIO 103.

BIO 205 - Topics in Molecular Biology

Course Units: 1.0 In this sophomore level course, students will learn the key concepts of the molecular biology of the cell as well as how to integrate the principles of cell structure and function with the underlying molecular mechanism(s). Discussions will focus on gene structure, mechanisms of replication, transcription and translation, mutation and DNA repair, gene regulations, and genomics. Each of these concepts will be discussed in the context of a unifying theme selected by the instructor. Possible examples of these themes include viruses, epigenetics, human diseases, biotechnology and artificial organisms, cell fate determination and differentiation. **Prerequisite(s):** BIO 103 and BIO 104 . **CC:** SET **Note:** May not be taken simultaneously with BIO 206.

BIO 242 - Neurobiology

Course Units: 1.0 This course focuses on fundamental concepts of neurobiology using studies from invertebrate and/or vertebrate model systems. Topics covered will include neural development, synaptic connectivity, neural plasticity, neuronal cell properties, sensory systems, and control of movement. **Cross-Listed:** PSY 212 **Prerequisite(s):** BIO 103 and BIO 104 **CC:** SET

PHL 265 - Minds and Machines

Course Units: 1.0 Is it possible to build a computer that effectively simulates human intelligence? If we did so, would the computer really be intelligent, or would it merely seem to be: Would the computer have free will? Do we have free will, or is human freedom merely an illusion? Do we have immaterial souls that can survive the deaths of our bodies and brains? In this advanced introduction to the philosophy of mind, we will consider these and other questions about what it means to have a mind, and about the relationship between mind and the brain. **CC:** HUM **ISP:** STS

PSY 200 - Statistical Methods in Psychology

Course Units: 1.0 The descriptive and inferential statistical procedures used by researchers to explain and analyze their results. Mean, variance, correlation, hypothesis testing using t-test, ANOVA, and nonparametric tests. **Prerequisite(s):** PSY 100 , PSY 210 / BIO 210 or (BIO 103 and BIO 104) **ISP:** ENS

PSY 210 - Neuroscience: Mind & Behavior

Course Units: 1.0 Basic concepts of brain functioning as they relate to psychological phenomena. Including methodology, neuroanatomy, and neurotransmission, important for understanding the mediation of behavior. **Cross-Listed:** BIO 210 **Prerequisite(s):** PSY 100 or (BIO 103 and BIO 104) **CC:** SET **ISP:** STS

PSY 220 - Attention and Memory

Course Units: 1.0 This course will focus on how people take in information about the world around them, store that information, and retrieve it to help them solve problems. In doing so, we will discuss the seemingly paradoxical conclusion that we take in and interpret a great deal of our environment but that we also fail to notice much of it. We will also discuss how we are able to work on and manipulate the information we have taken in, and make decisions based on it, emphasizing the impact that this process has on our ability to perform many cognitive tasks. Additionally, those factors that influence how and how well we encode and later retrieve various types of information will be considered. **Prerequisite(s):** PSY 100 or (BIO 103 and BIO 104)

Take one of the following:

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

or

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

2. Required and cognate courses in one of three tracks:

Bioscience Track:

Required Courses:

BIO 362 - Experimental Neurobiology w/lab

Course Units: 1.0 This course provides an overview of biological function of animal nervous systems, with an emphasis on specific experimental methods and primary literature underlying this knowledge. Topics include ionic basis of actions potentials, electrophysiology, sensory and motor systems, brain-machine interfaces and the neural basis of animal behavior and navigation. Inquiry-based laboratory exercises include basic techniques in electrophysiology recording and stimulation, fine dissection, fluorescent labeling of neural cells, as well as data analysis, presentation and communication (writing intensive). **Cross-Listed:** PSY 312 **Prerequisite(s):** BIO 205 and either BIO 206 or BIO 242 . **Corequisite(s):** BIO 362L **CC:** SET **Lecture/Lab Hours** One lab per week.

or

BIO 363 - Cellular Neurosciences W/Lab

Course Units: 1 This is a discussion-based course that focuses on reading and presenting primary papers on the pathogenesis of neurological diseases and the latest advances in treatments including iPSCs, organoids, and AI interface. Woven into the discussion will be the social and ethical implication of using cutting-edge technology to combat these intractable diseases. Combined lecture and lab course meets twice/week for 3 hours; with additional laboratory time as needed **Prerequisite(s):** BIO 205 and either BIO 206 or BIO 242 **Corequisite(s):** BIO 363L **CC:** SCLB, WAC, WAC-R

In addition:

CHM 101 - Introductory Chemistry 1

Course Units: 1.0 This is an introductory course that focuses on atomic and molecular structure, chemical bonding, stoichiometry, aqueous chemical reactions, and the properties of gases, liquids, solids and solutions. **Prerequisite(s):** Not open to students who have scored 4 or 5 on the AP Chemistry Exam or who have completed CHM 110H . All students who wish to enroll in an introductory chemistry course must take a placement examination to determine the appropriate course. See Course Selection Guidelines for more information on placement. **Corequisite(s):** CHM 101L **CC:** SCLB **Lecture/Lab Hours** Three lab hours/week,6/10 weeks. **ISP:** ENS

CHM 102 - Introductory Chemistry 2

Course Units: 1.0 A continuation of CHM 101 , focusing on thermodynamics, chemical kinetics, chemical equilibrium, acids and bases, electrochemistry, and an introduction to organic chemistry. **Prerequisite(s):** CHM 101 or placement via the placement exam. **Corequisite(s):** CHM 102L **Prereq/Corequisite(s):** Not open to students who have taken CHM 110H . **CC:** SCLB, GNPS **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

or

CHM 110H - Honors Introductory Chemistry

Course Units: 1.0 A laboratory-intensive course that covers the main topics of CHM 101 and CHM 102 and is meant to replace those courses for students who have strong backgrounds in introductory chemistry. **Prerequisite(s):** Students who have scored 4 or 5 on the AP chemistry exam will be automatically placed into CHM 110H; see Course Selection guidelines for more information on placement. **CC:** SCLB, GNPS **ISP:** ENS **Note:** Students who have scored 4 or 5 on the AP chemistry exam or who successfully complete CHM 110H will also receive AP credit for CHM 101 .

Take any <u>one</u> of the following courses:

MTH 110 - Calculus 1: Differential Calculus

Course Units: 1.0 Differential calculus of functions of a single variable. Limits, continuity, differentiation, computational aspects of Maclaurin and Taylor polynomials and series, and applications. **Note:** Not intended for students who have passed MTH 059 ,MTH 105 , MTH 113 , MTH 110P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

Any one other of the following:

BIO 325 - Animal Behavior w/lab

Course Units: 1.0 An introduction to the study of animal behavior. The mechanisms and evolutionary processes underlying animal behavior under natural conditions will be examined. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 325L **CC:** SET **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 330 - Comparative Animal Physiology w/lab

Course Units: 1.0 A study of internal physiological systems (e.g., respiration, circulation, and muscle systems). Physiological function in a wide variety of animal groups with a strong emphasis on the interaction of organisms with their environment. **Prerequisite(s):** BIO 205 and BIO 206 **Corequisite(s):** BIO 330L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 350 - Evolutionary Biology w/lab

Course Units: 1.0 Major concepts and mechanisms of biological evolution, including history of life, population genetics, molecular evolution, Darwinian medicine, and an emphasis on the processes of speciation. **Prerequisite(s):** BIO 103 and BIO 104 or permission of the instructor. **Corequisite(s):** BIO-350L **CC:** SET **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 362 - Experimental Neurobiology w/lab

Course Units: 1.0 This course provides an overview of biological function of animal nervous systems, with an emphasis on specific experimental methods and primary literature underlying this knowledge. Topics include ionic basis of actions potentials, electrophysiology, sensory and motor systems, brain-machine interfaces and the neural basis of animal behavior and navigation. Inquiry-based laboratory exercises include basic techniques in electrophysiology recording and stimulation, fine dissection, fluorescent labeling of neural cells, as well as data analysis, presentation and communication (writing intensive). **Cross-Listed:** PSY 312 **Prerequisite(s):** BIO 205 and either BIO 206 or BIO 242 . **Corequisite(s):** BIO 362L **CC:** SET **Lecture/Lab Hours** One lab per week.

BIO 370 - Endocrinology

Course Units: 1.0 Principles of endocrine and neuroendocrine regulation of physiological processes, concentrating on metabolism, growth, and reproduction. **Prerequisite(s):** BIO 205 **CC:** SET

BIO 384 - Genetics and Molecular Biology w/lab

Course Units: 1.0 The use of both classical genetics and molecular biology as experimental tools is currently being applied to an extremely diverse array of questions in biology. This course will expose the student to many of the commonly-used techniques in the "toolkit" of the geneticist/molecular biologist. Emphasis will be on recent advances in our understanding of topics of current interest such as development, cellular response to environmental stimuli, tumor formation, human genetic disease, circadian rhythms, and mammalian sex determination, amongst others.

Laboratory will emphasize the use of modern molecular biological techniques and will involve group projects of the students' choice. **Prerequisite(s):** BIO 205 and CHM 102 or CHM 110H **Corequisite(s):** BIO 384L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

PSY 310 - Cognitive Neuroscience

Course Units: 1.0 This course will present in depth the present understanding of the brain mechanisms that give rise to many mental processes, including attention, memory, language production, and comprehension, numerical processing, reasoning, emotions, and executive functioning. Weekly laboratory sessions will cover major methodologies used in cognitive neuroscience, including brain imaging and neural network simulation. **Prerequisite(s):** (PSY 210 or BIO 210) and PSY 220 and PSY 300 **Corequisite(s):** PSY 310L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week.

Cognitive Track:

Required Courses:

CHM 101 - Introductory Chemistry 1

Course Units: 1.0 This is an introductory course that focuses on atomic and molecular structure, chemical bonding, stoichiometry, aqueous chemical reactions, and the properties of gases, liquids, solids and solutions. **Prerequisite(s):** Not open to students who have scored 4 or 5 on the AP Chemistry Exam or who have completed CHM 110H . All students who wish to enroll in an introductory chemistry course must take a placement examination to determine the appropriate course. See Course Selection Guidelines for more information on placement. **Corequisite(s):** CHM 101L **CC:** SCLB **Lecture/Lab Hours** Three lab hours/week,6/10 weeks. **ISP:** ENS

PSY 300 - Research Methods in Psychology

Course Units: 1.0 Students will learn how to conduct research in psychological science, including hypothesis development, research design, data collection, scientific writing, ethical considerations, and dissemination. Students will also learn how to conduct statistical analyses using the SPSS software package, to include regression as well as analysis of within-participant and factorial designs. In the capstone assignment, students will develop their own hypotheses and design their own psychological experiments with which to test those hypotheses. **Prerequisite(s):** PSY 200 with a grade of C- or better; students who earned a B-plus or better in STA 104 , STA 164 , or ECO 243 are also eligible to enroll in PSY 300; students who earned a 4 or 5 in Statistics AP are eligible to enroll in PSY 300. **Corequisite(s):** PSY 300L **CC:** WAC, WAC-R **Lecture/Lab Hours** One lab per week.

PSY 310 - Cognitive Neuroscience

Course Units: 1.0 This course will present in depth the present understanding of the brain mechanisms that give rise to many mental processes, including attention, memory, language production, and comprehension, numerical processing, reasoning, emotions, and executive functioning. Weekly laboratory sessions will cover major methodologies used in cognitive neuroscience, including brain imaging and neural network simulation. **Prerequisite(s):** (PSY 210 or BIO 210) and PSY 220 and PSY 300 **Corequisite(s):** PSY 310L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week.

In addition:

Take any <u>one</u> of the following math courses:

MTH 110 - Calculus 1: Differential Calculus

Course Units: 1.0 Differential calculus of functions of a single variable. Limits, continuity, differentiation, computational aspects of Maclaurin and Taylor polynomials and series, and applications. **Note:** Not intended for students who have passed MTH 059 ,MTH 105 , MTH 113 , MTH 110P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

Any one of the following:

BIO 325 - Animal Behavior w/lab

Course Units: 1.0 An introduction to the study of animal behavior. The mechanisms and evolutionary processes underlying animal behavior under natural conditions will be examined. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 325L **CC:** SET **Lecture/Lab Hours** One lab per week. **ISP:** ENS

CSC 320 - Artificial Intelligence

Course Units: 1.0 Fundamental concepts used in creating "intelligent" computer systems; semantic representation, logical deduction, natural language processing, and game playing; expert systems, knowledge-based systems, and elementary robotics. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . Recommended: CSC 250 . MTH 199 can be substituted for MTH 197

PSY 213 - Clinical Neuropsychology

Course Units: 1.0 This course will examine the relationship between brain function and behavior, especially the evaluation and treatment of individuals across the lifespan who have cognitive deficits and brain compromise (e.g., due to injury, neurodevelopmental or degenerative processes, toxic exposure, etc.). The material is interdisciplinary,

integrating across various sub-disciplines of medicine (e.g., neurology, psychiatry, radiology) and subfields of psychology (e.g. neuroscience, clinical disorders, assessment, cognitive, health). Clinical cases and research reports will be used to illustrate and characterize neuropsychological phenomena, conditions, and diagnoses. The course objectives will be accomplished through lecture, readings, discussion, guest speakers, and experiential activities (e.g., clinical interview, test administration, field experience, etc.). **Prerequisite(s):** PSY 100 or PSY 210 or BIO 210 or instructor permission

PSY 225 - The Psychology of Language

Course Units: 1.0 This course will present a broad overview of language and its instantiation within the human brain. We will pay particular attention to 1) the ways that neurological disorders impact language functioning, and 2) how these patterns of language breakdown inform psychological models of typical language processing. This course will cover basic anatomy as well as a survey of language related topics (e.g., speech perception, deafness, language acquisition, linguistic diversity). **Prerequisite(s):** PSY 100

PSY 313 - Sensation and Perception

Course Units: 1.0 The study of sensation and perception examines the physics of the real world (stimulus), how the nervous system captures information about the environment (sensation), and the translation of sensory information into meaningful events (perception). Multiple levels of analysis will be introduced including sensory physiology, psychophysiology, and psychophysics. The class will cover a variety of topics, possibly to include how the eye is not a camera, why people need glasses, how 3-D movies work, the mysteries of face blindness, and what's hiding behind your eardrum. **Prerequisite(s):** (PSY 210 or BIO 210) and PSY 300 **Corequisite(s):** PSY 313L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

PSY 410 - Seminar in Brain and Behavior

Course Units: 1.0 This seminar will provide students with an opportunity to examine how brain processes impact behavior and psychological functioning. Students will gain experience giving oral presentations and critically evaluating empirical studies pertaining to both normal and abnormal behavior. **Cross-Listed:** BIO 211 **Prerequisite(s):** (PSY 210 or BIO 210) and PSY 300 **CC:** SET, WAC, WS

Computational Track:

Required Courses:

CSC 120 - Programming on Purpose

Course Units: 1.0 An introduction to software design principles aimed at making software more efficient, robust, readable, maintainable, and reusable. An introduction to object-oriented programming and design, including classes, objects, methods, and sub-typing. **Prerequisite(s):** C- or better in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 or CSC 108 . A grade of C- or better is required to continue with any course that requires CSC 120 as a prerequisite. **CC:** SET

MTH 197 - Discrete Mathematics for Computer Science

Course Units: 1.0 An introduction to fundamental concepts and methods of proof in mathematics and computer science. Topics include elementary logic, functions, relations, sets, and basic combinatorics. **Note:** Not open to students who have passed MTH 199 . **CC:** QMR

or

MTH 199 - Introduction to Logic and Set Theory

Course Units: 1.0 Designed to enable the student to develop the ability to understand and communicate mathematical arguments. Logic and set theory from the core. Selected topics are covered at the discretion of the instructor. For those considering any form of mathematics major, the department recommends that Math 199 be taken by fall term of the sophomore year, if possible. **Note:** Credit is not normally given for both MTH 197 and MTH 199. MTH 115 is usually taken before MTH 199. **Prerequisite(s):** One of MTH 112, MTH 113 ,MTH 115 , MTH 115H, MTH 117 , IMP 120 or permission of the department chair. **CC:** WAC, WAC-R

Take any <u>one</u> of the following math courses:

MTH 110 - Calculus 1: Differential Calculus

Course Units: 1.0 Differential calculus of functions of a single variable. Limits, continuity, differentiation, computational aspects of Maclaurin and Taylor polynomials and series, and applications. **Note:** Not intended for students who have passed MTH 059 ,MTH 105 , MTH 113 , MTH 110P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 112 - Calculus 2: Integral Calculus

Course Units: 1.0 Integral calculus of functions of a single variable. The fundamental theorem, formal integration, several techniques of integration, and applications. Not open to students who have taken MTH 102 or MTH 112P. **Prerequisite(s):** One of MTH 105 , MTH 110 or MTH 110P. **CC:** QMR **ISP:** ENS **Note:** Not open to students with credit for MTH 113 or MTH 113P

MTH 113 - Accelerated Single-Variable Calculus

Course Units: 1.0 Self-contained treatment of the main topics in MTH 110 and MTH 112. Intended for first-year students who have been introduced to (but have not yet mastered) the basics of differential and integral calculus. **Note:** Not open to students with credit for MTH 105 , MTH 110 , MTH 112 , MTH 112P, or MTH 113P. **CC:** QMR **ISP:** ENS

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

Any TWO from the following list:

CSC 151 - Data Structures

Course Units: 1.0 Basic concepts of data organization and abstraction, software design, stacks, queues, trees, and their implementation with linked structures. Programming in Java. **Prerequisite(s):** MTH 197 and a C- or higher in CSC

120 . MTH 199 can be substituted for MTH 197 **Prereq/Corequisite(s):** A grade of C- or better is required in order to continue with any course that requires CSC 151 as a prerequisite.

CSC 206 - Text Analytics

Course Units: 1.0 This course introduces computational techniques for extracting information from unstructured text. This includes reading in different types of text, preparing text for further processing, summarizing and visualizing basic descriptive statistics, as well as applications, such as sentiment analysis, information retrieval, information extraction, summarization, and topic modeling. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 **CC:** SET

CSC 234 - Data Visualization

Course Units: 1.0 Data has a story which has to be told! Data visualization is all around us, in print and in electronic media. Some of it is accurate and effective, while some is extremely unclear, confusing, or misleading. In this course we will study various approaches to information visualization and associated data analysis techniques. How do we take a lot of data, or very complex data, and present it in ways that allow it to communicate information clearly and effectively? The course will explore applications from science, medicine, social science, and humanities. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 . **CC:** SET

CSC 235 - Modeling & Simulation

Course Units: 1.0 This course will study modeling and simulation as they occur in and apply to a number of different disciplines. It will cover system dynamics models which address major systems that change with time, and cellular automaton simulations that look more narrowly at individuals affecting individuals. Other topics will include rate of change, errors, simulation techniques, empirical modeling, and an introduction to high performance computing. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 **CC:** SET

CSC 243 - Bioinformatics: Information Technology in the Life Sciences

Course Units: 1.0 Biology and computer science students will gain a working knowledge of the basic principles of the others' discipline, and will collaborate together on bioinformatics projects. Topics include pairwise and multiple sequence alignments, phylogenetic trees, gene expression analysis, and protein structure prediction. Additional topics will be presented by invited speakers. **Cross-Listed:** BIO 243 **Prerequisite(s):** BIO-205 **or** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 ,or CSC 108 . **CC:** SET **ISP:** STS

CSC 320 - Artificial Intelligence

Course Units: 1.0 Fundamental concepts used in creating "intelligent" computer systems; semantic representation, logical deduction, natural language processing, and game playing; expert systems, knowledge-based systems, and elementary robotics. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . Recommended: CSC 250 . MTH 199 can be substituted for MTH 197

CSC 321 - Data Mining and Machine Learning

Course Units: 1.0 Introduces Data Mining, where previously unknown and potentially useful information is automatically extracted from data sources, using regularities or patterns of implicit information. Such patterns can be used to make predictions over future data, and be used to explain and understand the nature of that data. Machine Learning is one mechanism by which data mining is achieved. It is used to discover and extract information from raw

data. This course will cover tools and techniques of machine learning that are used in practical data mining. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 325 - Robotics

Course Units: 1.0 The course will cover basic algorithms necessary for motor control. Building on these methods we will discuss higher level navigation for mobile robots, as well as the sensing necessary for localization of the robot in its environment. Finally, we will also examine the challenges of motion planning for jointed robots with many degrees of freedom. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 329 - Neural Networks

Course Units: 1.0 **(TBD: Staff) Cross-Listed:** ECE 329

- PHL 442 - Advanced Logic

PHL 462 - Philosophy of Language

Course Units: 1.0 An examination of key concepts in the philosophy of language, such as truth, meaning, reference, definite descriptions, names, demonstratives, and propositional attitudes. The fundamental question: How does language connect us to the world? **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM, WS

Additional Courses for All Majors

Any one additional course from the following list:

BIO 325 - Animal Behavior w/lab

Course Units: 1.0 An introduction to the study of animal behavior. The mechanisms and evolutionary processes underlying animal behavior under natural conditions will be examined. **Prerequisite(s):** BIO 103 or permission of the instructor. **Corequisite(s):** BIO 325L **CC:** SET **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 330 - Comparative Animal Physiology w/lab

Course Units: 1.0 A study of internal physiological systems (e.g., respiration, circulation, and muscle systems). Physiological function in a wide variety of animal groups with a strong emphasis on the interaction of organisms with their environment. **Prerequisite(s):** BIO 205 and BIO 206 **Corequisite(s):** BIO 330L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 332 - Comparative Vertebrate Anatomy w/lab

Course Units: 1.0 Comparative analysis of vertebrate structure with emphasis on evolution and function. Laboratories examine vertebrate anatomy through dissections of four groups: mammals, fish, amphibians, and birds. **Prerequisite(s):** BIO 103 , BIO 104 and BIO 206 **Corequisite(s):** BIO 332L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

BIO 350 - Evolutionary Biology w/lab

Course Units: 1.0 Major concepts and mechanisms of biological evolution, including history of life, population genetics, molecular evolution, Darwinian medicine, and an emphasis on the processes of speciation. **Prerequisite(s):** BIO 103 and BIO 104 or permission of the instructor. **Corequisite(s):** BIO-350L **CC:** SET **Lecture/Lab Hours** One lab per week. **ISP:** ENS

BIO 354 - Developmental Biology w/lab

Course Units: 1.0 The study of the developing embryo is the science of the emergence of living order. With an emphasis on experimental design, we examine cell communication, cell fate, tissue patterning and morphogenesis, and gene expression and regulation explored within the context of experimental organisms. **Prerequisite(s):** BIO 205 **Corequisite(s):** BIO 354L **CC:** SCLB, WAC, WAC-R **Lecture/Lab Hours** One lab per week.

BIO 362 - Experimental Neurobiology w/lab

Course Units: 1.0 This course provides an overview of biological function of animal nervous systems, with an emphasis on specific experimental methods and primary literature underlying this knowledge. Topics include ionic basis of actions potentials, electrophysiology, sensory and motor systems, brain-machine interfaces and the neural basis of animal behavior and navigation. Inquiry-based laboratory exercises include basic techniques in electrophysiology recording and stimulation, fine dissection, fluorescent labeling of neural cells, as well as data analysis, presentation and communication (writing intensive). **Cross-Listed:** PSY 312 **Prerequisite(s):** BIO 205 and either BIO 206 or BIO 242 . **Corequisite(s):** BIO 362L **CC:** SET **Lecture/Lab Hours** One lab per week.

BIO 363 - Cellular Neurosciences W/Lab

Course Units: 1 This is a discussion-based course that focuses on reading and presenting primary papers on the pathogenesis of neurological diseases and the latest advances in treatments including iPSCs, organoids, and AI interface. Woven into the discussion will be the social and ethical implication of using cutting-edge technology to combat these intractable diseases. Combined lecture and lab course meets twice/week for 3 hours; with additional laboratory time as needed **Prerequisite(s):** BIO 205 and either BIO 206 or BIO 242 **Corequisite(s):** BIO 363L **CC:** SCLB, WAC, WAC-R

BIO 364 - Epigenetics, Development, and Diseases

Course Units: 1.0 This course will focus on the epigenetic phenomena (e.g., RNA interference and genomic imprinting) on development, embryonic stem cells, animal cloning, and heritable human diseases. Epigenetic patterns are changes in gene expression that do not involve changes in DNA sequences. **Prerequisite(s):** BIO 205 or permission of the instructor. **CC:** SET

BIO 370 - Endocrinology

Course Units: 1.0 Principles of endocrine and neuroendocrine regulation of physiological processes, concentrating on metabolism, growth, and reproduction. **Prerequisite(s):** BIO 205 **CC:** SET

BIO 380 - Biochemistry: Nucleic Acids, Carbohydrates, and Lipids w/lab

Course Units: 1.0 An in-depth investigation into some of the macromolecules that are essential to life's processes. The course focuses on non-protein molecules and their unique chemical properties. **Cross-Listed:** BCH 380 **Prerequisite(s):** BIO 205 and CHM 232 , or permission of the instructor. CHM 232 , or permission of the instructor. **Corequisite(s):** BIO 380L **Prereq/Corequisite(s):** Not open to students who have completed BIO 335 . **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week.

BIO 384 - Genetics and Molecular Biology w/lab

Course Units: 1.0 The use of both classical genetics and molecular biology as experimental tools is currently being applied to an extremely diverse array of questions in biology. This course will expose the student to many of the commonly-used techniques in the "toolkit" of the geneticist/molecular biologist. Emphasis will be on recent advances in our understanding of topics of current interest such as development, cellular response to environmental stimuli, tumor formation, human genetic disease, circadian rhythms, and mammalian sex determination, amongst others. Laboratory will emphasize the use of modern molecular biological techniques and will involve group projects of the students' choice. **Prerequisite(s):** BIO 205 and CHM 102 or CHM 110H **Corequisite(s):** BIO 384L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

CSC 206 - Text Analytics

Course Units: 1.0 This course introduces computational techniques for extracting information from unstructured text. This includes reading in different types of text, preparing text for further processing, summarizing and visualizing basic descriptive statistics, as well as applications, such as sentiment analysis, information retrieval, information extraction, summarization, and topic modeling. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 **CC:** SET

CSC 234 - Data Visualization

Course Units: 1.0 Data has a story which has to be told! Data visualization is all around us, in print and in electronic media. Some of it is accurate and effective, while some is extremely unclear, confusing, or misleading. In this course we will study various approaches to information visualization and associated data analysis techniques. How do we take a lot of data, or very complex data, and present it in ways that allow it to communicate information clearly and effectively? The course will explore applications from science, medicine, social science, and humanities. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 . **CC:** SET

CSC 235 - Modeling & Simulation

Course Units: 1.0 This course will study modeling and simulation as they occur in and apply to a number of different disciplines. It will cover system dynamics models which address major systems that change with time, and cellular automaton simulations that look more narrowly at individuals affecting individuals. Other topics will include rate of change, errors, simulation techniques, empirical modeling, and an introduction to high performance computing. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 **CC:** SET

CSC 243 - Bioinformatics: Information Technology in the Life Sciences

Course Units: 1.0 Biology and computer science students will gain a working knowledge of the basic principles of the others' discipline, and will collaborate together on bioinformatics projects. Topics include pairwise and multiple sequence alignments, phylogenetic trees, gene expression analysis, and protein structure prediction. Additional topics will be presented by invited speakers. **Cross-Listed:** BIO 243 **Prerequisite(s):** BIO-205 **or** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 ,or CSC 108 . **CC:** SET **ISP:** STS

CSC 320 - Artificial Intelligence

Course Units: 1.0 Fundamental concepts used in creating "intelligent" computer systems; semantic representation, logical deduction, natural language processing, and game playing; expert systems, knowledge-based systems, and

elementary robotics. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . Recommended: CSC 250 . MTH 199 can be substituted for MTH 197

CSC 321 - Data Mining and Machine Learning

Course Units: 1.0 Introduces Data Mining, where previously unknown and potentially useful information is automatically extracted from data sources, using regularities or patterns of implicit information. Such patterns can be used to make predictions over future data, and be used to explain and understand the nature of that data. Machine Learning is one mechanism by which data mining is achieved. It is used to discover and extract information from raw data. This course will cover tools and techniques of machine learning that are used in practical data mining. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 325 - Robotics

Course Units: 1.0 The course will cover basic algorithms necessary for motor control. Building on these methods we will discuss higher level navigation for mobile robots, as well as the sensing necessary for localization of the robot in its environment. Finally, we will also examine the challenges of motion planning for jointed robots with many degrees of freedom. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197

CSC 329 - Neural Networks

Course Units: 1.0 **(TBD: Staff) Cross-Listed:** ECE 329

ECE 487 - Medical Imaging Systems

Course Units: 1.0 The basic physics, instrumentation, system design, and image reconstruction algorithms are covered for the following imaging modalities: ultrasound, radiography, x-ray computed tomography (CT), magnetic resonance imaging (MRI), planar scintigraphy, and positron emission tomography (PET). **Cross-Listed:** BME 487 **Prerequisite(s):** ECE 241

MTH 128 - Probability

Course Units: 1.0 This course is a survey of the basic concepts of probability theory including permutations and combinations, conditional probability, Bayes' formula, independence, discrete and continuous random variables, expectation and variance, the Central Limit Theorem, and selected topics. **Cross-Listed:** STA 128 **Prerequisite(s):** One of MTH 112, MTH 113, MTH 112P, MTH 113P, IMP 120, or IMP 121. **Note:** Not open to students who have passed or are taking MTH 199. Students who intend to minor in Mathematics or Financial and Actuarial Mathematics, or major in Mathematics should take MTH 228 /STA 228, as credit is not normally given for both MTH 128/STA 128 and MTH 228 /STA 228.

PHL 231 - Symbolic Logic

Course Units: 1.0 An introduction to modern symbolic logic, focusing on translation, semantics and syntax for propositional and predicate logic. You will learn to translate natural language into the language of logic and vice versa, and study key concepts such as validity, consistency, proof, soundness and completeness. **CC:** HUM, QMR **ISP:** LAW

PHL 232 - Philosophy of Science

Course Units: 1.0 An introduction to philosophy of science. What are scientific theories, and how are they tested? What is scientific method? What counts as evidence for a scientific theory? What is scientific explanation? We will approach these questions both philosophically and through formal techniques. **CC:** HUM **ISP:** STS

PHL 365 - Philosophy of Mind

Course Units: 1.0 Critical examination of some central issues in the philosophy of mind, including the mind/body problem, the problem of other minds, "intelligent" machines, and animal minds. **CC:** HUM

PHL 447 - Advanced Logic

Course Units: 1.0 May be repeated, if topic changes. **Prerequisite(s):** PHL 231 or permission of instructor. **CC:** HUM, WS

PHL 462 - Philosophy of Language

Course Units: 1.0 An examination of key concepts in the philosophy of language, such as truth, meaning, reference, definite descriptions, names, demonstratives, and propositional attitudes. The fundamental question: How does language connect us to the world? **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM, WS

PSY 213 - Clinical Neuropsychology

Course Units: 1.0 This course will examine the relationship between brain function and behavior, especially the evaluation and treatment of individuals across the lifespan who have cognitive deficits and brain compromise (e.g., due to injury, neurodevelopmental or degenerative processes, toxic exposure, etc.). The material is interdisciplinary, integrating across various sub-disciplines of medicine (e.g., neurology, psychiatry, radiology) and subfields of psychology (e.g. neuroscience, clinical disorders, assessment, cognitive, health). Clinical cases and research reports will be used to illustrate and characterize neuropsychological phenomena, conditions, and diagnoses. The course objectives will be accomplished through lecture, readings, discussion, guest speakers, and experiential activities (e.g., clinical interview, test administration, field experience, etc.). **Prerequisite(s):** PSY 100 or PSY 210 or BIO 210 or instructor permission

PSY 215 - Health Psychology

Course Units: 1.0 This course will examine psychology's role in the etiology, prevention, progression, and treatment of disease. Topics will include mechanisms by which stress and health-related behaviors such as diet, exercise, smoking and substance abuse contribute to illness, doctor-patient communication, problems of medical compliance, cognitive/behavioral treatment techniques, pain management, and health promotion/ disease prevention strategies. **Prerequisite(s):** PSY 100 **ISP:** STS

PSY 225 - The Psychology of Language

Course Units: 1.0 This course will present a broad overview of language and its instantiation within the human brain. We will pay particular attention to 1) the ways that neurological disorders impact language functioning, and 2) how these patterns of language breakdown inform psychological models of typical language processing. This course will cover basic anatomy as well as a survey of language related topics (e.g., speech perception, deafness, language acquisition, linguistic diversity). **Prerequisite(s):** PSY 100

PSY 240 - Developmental Psychology

Course Units: 1.0 This course traces the processes that influence human development across the lifespan, from infancy to old age. What are the cognitive, emotional and social behavioral milestones that occur at each significant stage of development? In what ways do human beings change as they get older, and in what ways do they stay the same? What early experiences can influence later developmental outcomes? The major theoretical perspectives that help illuminate the developmental process, as well as the experimental and quasi-experimental methods of study, will be emphasized. **Prerequisite(s):** PSY 100 **CC:** SOCS, WAC, JCHF, JSPE

PSY 250 - Clinical Psychology 1: Disorders

Course Units: 1.0 An introduction to the diagnosis, study, and treatment of psychological disorders. Emphasis will be placed on the cause (i.e., etiology), expected outcome (i.e., prognosis), and prevalence of the major mental disorders recognized by the American Psychiatric Association in the Diagnostic and Statistical Manual for Mental Disorders. The course covers major categories of psychiatric diagnoses including Anxiety, Mood, Eating, Sexual, Trauma and Stressor-Related, Obsessive-Compulsive, Personality, Somatic, Dissociative, and Psychotic Disorders. **Prerequisite(s):** PSY 100 or PSY 210 or BIO 210 **CC:** GSPE

PSY 300 - Research Methods in Psychology

Course Units: 1.0 Students will learn how to conduct research in psychological science, including hypothesis development, research design, data collection, scientific writing, ethical considerations, and dissemination. Students will also learn how to conduct statistical analyses using the SPSS software package, to include regression as well as analysis of within-participant and factorial designs. In the capstone assignment, students will develop their own hypotheses and design their own psychological experiments with which to test those hypotheses. **Prerequisite(s):** PSY 200 with a grade of C- or better; students who earned a B-plus or better in STA 104 , STA 164 , or ECO 243 are also eligible to enroll in PSY 300; students who earned a 4 or 5 in Statistics AP are eligible to enroll in PSY 300. **Corequisite(s):** PSY 300L **CC:** WAC, WAC-R **Lecture/Lab Hours** One lab per week.

PSY 310 - Cognitive Neuroscience

Course Units: 1.0 This course will present in depth the present understanding of the brain mechanisms that give rise to many mental processes, including attention, memory, language production, and comprehension, numerical processing, reasoning, emotions, and executive functioning. Weekly laboratory sessions will cover major methodologies used in cognitive neuroscience, including brain imaging and neural network simulation. **Prerequisite(s):** (PSY 210 or BIO 210) and PSY 220 and PSY 300 **Corequisite(s):** PSY 310L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week.

PSY 313 - Sensation and Perception

Course Units: 1.0 The study of sensation and perception examines the physics of the real world (stimulus), how the nervous system captures information about the environment (sensation), and the translation of sensory information into meaningful events (perception). Multiple levels of analysis will be introduced including sensory physiology, psychophysiology, and psychophysics. The class will cover a variety of topics, possibly to include how the eye is not a camera, why people need glasses, how 3-D movies work, the mysteries of face blindness, and what's hiding behind your eardrum. **Prerequisite(s):** (PSY 210 or BIO 210) and PSY 300 **Corequisite(s):** PSY 313L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

PSY 331 - Psychology of Emotion

Course Units: 1.0 Examination and evaluation of scientific theories and research about emotions, including the evolution and development of emotions, the physiological and neurological underpinnings of emotions, individual differences and psychopathology, and the role of emotions in close relationships and everyday life. **Prerequisite(s):** PSY 210 or PSY 213 or PSY 220 or PSY 225 or PSY 230 or PSY 240 or PSY 250 or PSY 251

PSY 352 - Psychological Assessment and Testing

Course Units: 1.0 Learn about one of psychology's most important and unique practical contributions. Review issues related to test construction (e.g., reliability and validity) and practice construction and validation of a new test that incorporates diversity, equity, and inclusion goals. Students will work with SPSS in the lab and will be exposed to a range of commonly used psychological assessments, such as intelligence tests, in lab sessions. **Prerequisite(s):** PSY 300 **CC:** WAC-R, JNPS

*Please note the 3-term PSY practicum only awards **one credit** upon completion of PSY-404.

PSY 402 - Honors Colloquium 1

Course Units: 0.0 A discussion-based course running the full academic year, open to junior and senior qualified students. Limited enrollments; students will be recommended for the course by faculty. Each year's topics will be determined by presenters in the Psychology Department's speaker series. Around eight speakers with expertise in psychology and neuroscience will be invited to present their research. Students will meet to discuss readings pertaining to upcoming speakers. Note: This course does not fulfill the seminar requirement for the psychology major, but it does satisfy the upper-level elective requirement for the psychology major. **Note:** This course does not fulfill the psychology major requirement of a seminar.

PSY 403 - Honors Colloquium 2

Course Units: 0.0 A discussion-based course running the full academic year, open to junior and senior qualified students. Limited enrollments; students will be recommended for the course by faculty. Each year's topics will be determined by presenters in the Psychology Department's speaker series. Around eight speakers with expertise in psychology and neuroscience will be invited to present their research. Students will meet to discuss readings pertaining to upcoming speakers. Note: This course does not fulfill the seminar requirement for the psychology major, but it does satisfy the upper-level elective requirement for the psychology major. **Prerequisite(s):** PSY 402 **Note:** This course does not fulfill the psychology major requirement of a seminar.

PSY 404 - Honors Colloquium 3

Course Units: 1.0 A discussion-based course running the full academic year, open to junior and senior qualified students. Limited enrollments; students will be recommended for the course by faculty. Each year's topics will be determined by presenters in the Psychology Department's speaker series. Around eight speakers with expertise in psychology and neuroscience will be invited to present their research. Students will meet to discuss readings pertaining to upcoming speakers. Note: This course does not fulfill the seminar requirement for the psychology major, but it does satisfy the upper-level elective requirement for the psychology major. **Prerequisite(s):** PSY 403 **Note:** This course does not fulfill the psychology major requirement of a seminar.

PSY 410 - Seminar in Brain and Behavior

Course Units: 1.0 This seminar will provide students with an opportunity to examine how brain processes impact behavior and psychological functioning. Students will gain experience giving oral presentations and critically evaluating empirical studies pertaining to both normal and abnormal behavior. **Cross-Listed:** BIO 211 **Prerequisite(s):** (PSY 210 or BIO 210) and PSY 300 **CC:** SET, WAC, WS

PSY 411 - Seminar in Clinical Neuropsychology

Course Units: 1.0 This seminar provides opportunity for an in-depth view into the field of Clinical Neuropsychology, which aims to explore the relationship between brain function and behavior, especially the evaluation and treatment of

individuals across the lifespan who have cognitive deficits and brain compromise (e.g., due to injury, neurodevelopmental or degenerative processes, toxic exposure, etc.). The material is interdisciplinary, integrating across various sub-disciplines of medicine (e.g. neurology, psychiatry, radiology) and subfields of psychology (e.g. neuroscience, clinical disorders, assessment, cognitive, health). Clinical cases and research reports will be used to illustrate and characterize neuropsychological phenomena, conditions, and diagnoses. The small class size will facilitate engage learning through discussion of primary research literature, student presentations, and experiential activities (e.g. , clinical interview, test administration, and community engagement/service learning opportunities). **Prerequisite(s):** PSY 300 and one of the following: PSY 210 or BIO 210 or PSY 213 or PSY 220 or PSY 250 or instructors permission **CC:** WS

PSY 420 - Seminar in Cognitive Psychology

Course Units: 1.0

The aim of this course is explore the concept of emotion from behavioral- and brain-based perspectives. While trying to understand the role of emotion in behavior has been an interest for centuries, what we know about the biological underpinnings of emotion, or affect, is only decades old.
Students will become familiar with basic concepts and methods used in affective science. Course discussions will likely include material related to pleasure/pain, mental health, neurological/psychiatric illnesses, psychotropic drugs, sexuality, eating, decision-making, and emotional regulation. **Prerequisite(s):** PSY 210 or BIO 210 or PSY 220 or permission of instructor. **CC:** WS

PSY 421 - Psychology & Neurology: Real World As Laboratory
PSY 422 - Communicating Psychological Science

4. Senior Writing Requirement (WS):

Senior Seminar Options:

A 2 or 3-term senior thesis or research project (required for Honors; also PSY 300 is required by Psychology supervisors) OR one the following seminars:

BIO 487 - Senior Writing Seminar: Topics in Ecological and Evolutionary Biology

Course Units: 1.0 One of these three courses (BIO-487, 488 or 489) is required by, and limited to, seniors who are not satisfying their WS requirement through either an independent research project or thesis. Each seminar will provide a forum in which a biological topic of current interest and importance is explored in depth. Students will gain experience in giving oral presentations and critically evaluating the written work of both established scientists and fellow students. A paper is required to fulfill the WS requirement. Enrollment is optional for interdepartmental Biology/Other majors. **CC:** WS

BIO 488 - Senior Writing Seminar: Topics in Organismal and Physiological Biology

Course Units: 1.0 One of these three courses (BIO-487, 488, 489) is required by, and limited to, seniors who are not satisfying their WS requirement through either an independent research project or thesis. Each seminar will provide a forum in which a biological topic of current interest and importance is explored in depth. Students will gain experience in giving oral presentations and critically evaluating the written work of both established scientists and fellow students. A paper is required to fulfill the WS requirement. Enrollment is optional for interdepartmental Biology/Other majors. **Prereq/Corequisite(s):** BIO 206 or BIO 242 **CC:** WS

BIO 489 - Senior Writing Seminar: Topics in Cellular and Molecular Biology

Course Units: 1.0 One of these three courses (BIO-487, 488, 489) is required by, and limited to, seniors who are not satisfying their WS requirement through either an independent research project or thesis. Each seminar will provide a forum in which a biological topic of current interest and importance is explored in depth. Students will gain experience in giving oral presentations and critically evaluating the written work of both established scientists and fellow students. A paper is required to fulfill the WS requirement. Enrollment is optional for interdepartmental Biology/Other majors. **CC:** WS

PSY 410 - Seminar in Brain and Behavior

Course Units: 1.0 This seminar will provide students with an opportunity to examine how brain processes impact behavior and psychological functioning. Students will gain experience giving oral presentations and critically evaluating empirical studies pertaining to both normal and abnormal behavior. **Cross-Listed:** BIO 211 **Prerequisite(s):** (PSY 210 or BIO 210) and PSY 300 **CC:** SET, WAC, WS

PSY 411 - Seminar in Clinical Neuropsychology

Course Units: 1.0 This seminar provides opportunity for an in-depth view into the field of Clinical Neuropsychology, which aims to explore the relationship between brain function and behavior, especially the evaluation and treatment of individuals across the lifespan who have cognitive deficits and brain compromise (e.g., due to injury, neurodevelopmental or degenerative processes, toxic exposure, etc.). The material is interdisciplinary, integrating across various sub-disciplines of medicine (e.g. neurology, psychiatry, radiology) and subfields of psychology (e.g. neuroscience, clinical disorders, assessment, cognitive, health). Clinical cases and research reports will be used to illustrate and characterize neuropsychological phenomena, conditions, and diagnoses. The small class size will facilitate engage learning through discussion of primary research literature, student presentations, and experiential activities (e.g. , clinical interview, test administration, and community engagement/service learning opportunities). **Prerequisite(s):** PSY 300 and one of the following: PSY 210 or BIO 210 or PSY 213 or PSY 220 or PSY 250 or instructors permission **CC:** WS

PSY 420 - Seminar in Cognitive Psychology

Course Units: 1.0

The aim of this course is explore the concept of emotion from behavioral- and brain-based perspectives. While trying to understand the role of emotion in behavior has been an interest for centuries, what we know about the biological underpinnings of emotion, or affect, is only decades old.
Students will become familiar with basic concepts and methods used in affective science. Course discussions will likely include material related to pleasure/pain, mental health, neurological/psychiatric illnesses, psychotropic drugs, sexuality, eating, decision-making, and emotional regulation. **Prerequisite(s):** PSY 210 or BIO 210 or PSY 220 or permission of instructor. **CC:** WS

Department Thesis Option:

Students must register for senior thesis courses in the department of their thesis advisor:

Biology thesis advisors:

BIO 497 - Biology Thesis Research 1

Course Units: 1.0 **(TBD: Staff)** A sequence that requires a thesis based on original scientific research. May be used to satisfy WS requirement and departmental component for honors in biology, or for WS requirement alone. Research students are strongly encouraged to attend departmental seminars. **Prerequisite(s):** Permission of the instructor. **CC:** WS

BIO 498 - Biology Thesis Research 2

Course Units: 1.0 A sequence that requires a thesis based on original scientific research. May be used to satisfy WS requirement and departmental component for honors in biology, or for WS requirement alone. Research students are strongly encouraged to attend departmental seminars. **Prerequisite(s):** Permission of the instructor. **CC:** WS

BIO 499 - Biology Thesis Research 3

Course Units: 1.0 A sequence that requires a thesis based on original scientific research. May be used to satisfy WS requirement and departmental component for honors in biology, or for WS requirement alone. Research students are strongly recommended to attend departmental seminars. **Prerequisite(s):** Permission of the instructor. **CC:** WS

Psychology thesis advisors:

PSY 498 - Psychology Senior Thesis 1

Course Units: 0.0 First term grade is pass or fail; a comprehensive grade for both terms is assigned at the end of the second term. **Prerequisite(s):** PSY 300

PSY 499 - Psychology Senior Thesis 2

Course Units: 2.0 First term grade is pass or fail; a comprehensive grade for both terms is assigned at the end of the second term. **Prerequisite(s):** PSY 498 **CC:** WS

or

PSY 487 - Psychology 3 Term Thesis 1

Course Units: 0.0 Psychology and Neuroscience majors may enroll in three-term theses, but such projects involve materially greater effort and accomplishment than a two-term thesis. The three-term thesis is not to be used to conduct a standard two-term thesis in three terms. Whether a two- or three-term thesis is conducted should be determined with the thesis advisor before the thesis commences.

PSY 488 - Psychology 3 Term Thesis 2

Course Units: 0.0 Psychology and Neuroscience majors may enroll in three-term theses, but such projects involve materially greater effort and accomplishment than a two-term thesis. The three-term thesis is not to be used to conduct a standard two-term thesis in three terms. Whether a two- or three-term thesis is conducted should be determined with the thesis advisor before the thesis commences. **Prerequisite(s):** PSY 487

PSY 489 - Psychology 3 Term Thesis 3

Course Units: 3.0 Psychology and Neuroscience majors may enroll in three-term theses, but such projects involve materially greater effort and accomplishment than a two-term thesis. The three-term thesis is not to be used to conduct a standard two-term thesis in three terms. Whether a two- or three-term thesis is conducted should be determined with the thesis advisor before the thesis commences. **Prerequisite(s):** PSY 488 **CC:** WS

Computer Science thesis advisors:

CSC 497 - Computer Science Capstone Seminar

Course Units: 0.5 Development of the skills necessary for independent research: Reading scholarly works, designing experiments and empirically evaluating their results. Development of a comprehensive senior capstone project proposal. Investigation of professional ethics, skills and responsibilities. **Prerequisite(s):** MTH 197 and a C- or higher in CSC 151 . MTH 199 can be substituted for MTH 197 **Note:** Normally taken in Spring of the Junior year.

CSC 498 - Computer Science Capstone Project 1

Course Units: 0.75 Design, implementation, and evaluation of the capstone project. **Prerequisite(s):** CSC 497 **CC:** WS **Note:** Normally taken during the Senior year.

CSC 499 - Computer Science Capstone Project 2

Course Units: 0.75 Design, implementation, and evaluation of the capstone project. **Prerequisite(s):** CSC 498 **CC:** WS **Note:** Normally taken during the Senior year.

Thesis advisors from other departments:

Contact the Neuroscience program director(s) first.

Requirements for Honors:

In addition to meeting college-wide requirements, honors in Neuroscience requires: (1) a minimum grade point average of 3.30 in the major (including thesis grades, but not including the CHM or MTH cognate courses listed in #2 above); (2) a minimum of three grades of A or A- in the required courses for all majors (see #1 above); (3) satisfactory completion of a senior thesis with a minimum grade of A-; (4) presentation of the student's work, usually at the Steinmetz Symposium. Any non-adjunct professor or lecturer in the Psychology, Biology, or Computer Science departments may advise a senior thesis; faculty members *not* in those departments must be affiliated with the Neuroscience program in order to advise senior theses. Adjunct faculty members may only advise theses with explicit approval of the Neuroscience program director(s). However, to do a thesis advised by a faculty member not affiliated with the Neuroscience program, students must receive permission from the program director(s) in advance. Students are advised to start the process of finding a thesis topic and advisor as early in the junior year as possible.

Course Selection Guidelines for the Neuroscience Major:

It is recommended that students in this major start with BIO 103, BIO 104, and PSY 210 as these courses are prerequisites for Neuroscience students to take the neuroscience-related courses in the Psychology department without taking PSY 100, which *does not count* toward the Neuroscience major. After completing PSY 210, Neuroscience students may take other Psychology courses without first completing PSY 100. *Students are strongly encouraged to take PSY 200, PSY 210, BIO 205, BIO 242 and CSC 106 (or CSC 103) as early as possible, preferably in the sophomore year.* CSC 106 is preferred over CSC 103, but both satisfy the same requirement. Students are also advised to take CHM 101 prior to taking BIO 205. Although not required, it is typical that Cognitive Track majors take senior seminars in the Psychology department, and Bioscience Track majors take senior seminars in the Biology department. Normally, courses taken outside of Union College will not be counted toward the major. However, exceptions can be made under extenuating circumstances on an ad-hoc basis. To receive Neuroscience credit for courses taken elsewhere, students must contact the program director(s) to request permission, and the courses must match a Union course or have similar neuroscience content to Union courses that do receive credit.

*MTH 110 may alternatively be satisfied by taking the **first two courses in the MTH 100-101-102** sequence.

Health Professions: doctoral programs (MD/DO/PhD) often require additional courses in chem (orgo), biochem, physics, as well as psychology and sociology (100s); other professional tracks may require Anatomy & Physiology (often taken at a nearby institution alongside Union classes).

Clinical Courses: (required for grad school in therapeutic realm: neuropsychologist, psychologist, psychiatrist, neurologist, counselor/therapist, occupational therapy...) PSY 213, PSY 250, PSY 351, PSY 451, PSY 352.

NS Honors Society (Nu Rho Psi): major/minor in NS, 3 terms of college (min cum GPA of 3.20), 3 NS courses (min NS GPA of 3.50)

Organizing Theme

Organizing Theme B.S. / B.A.

The Organizing Theme Major is best suited for the self-motivated student who has a well-defined intellectual curiosity for a topic involving multiple disciplines and which cannot be accommodated by the already existing majors, double majors, or interdepartmental majors at Union College. The Organizing Theme Major encourages the exploration of thematically related connections across disciplines, and therefore must incorporate courses from at least three different departments, with no more than four courses from any one department to count toward the major. The student must choose and work with an advisor (or advisors) who is supportive of the student's proposed Organizing Theme Major and has a clear understanding of what the project entails.

The Application Process

The Organizing Theme Major proposal requires the approval of the chosen Organizing Theme advisor(s) and then a faculty committee established by the Dean of Studies. It may be proposed no sooner than the spring term of the first-year and no later than the sixth week of the spring term sophomore year. Exceptions to the timeline must be approved by the Director of the Scholars Program, who serves as Chair to the Organizing Theme Major Committee. For more information about the Organizing Theme Major and the application process, see the Organizing Theme Web page or contact the Director of Scholars Program, who serves as Chair to the committee.

To propose an Organizing Theme Major, students complete the Organizing Theme Application Form. The Organizing Theme Major proposal must be prepared with the guidance, input and approval of the Organizing Theme Major advisor(s) you have chosen to work with before it is submitted using the online form. It is suggested that prospective candidates meet with the Director of the Scholars Program to discuss their proposal before submitting the application.

The Organizing Theme Major Committee will review the proposal and if necessary, suggest revisions for the student to make in consultation with the advisor(s).

If no revisions are required, the Organizing Theme Major Committee will consider the proposal for final approval. If revisions are required, the student along with the advisor(s) will make them, submitting a revised application form.

The committee reviews and officially approves the proposal, and gives it to the Director of the Scholars Program who forwards it to the Registrar. The student then completes a Declaration of Major form and submits it to the Registrar. If all the paperwork in is order, the Registrar lists the student's major as Organizing Theme.

Please note that this process often takes a month or more.

Requirements for the Major

The approved program must conform to the disciplines already established at Union. Your proposal may be submitted no sooner than spring term of your first-year, and must be submitted, at the very latest, by week six of spring term of your sophomore year. Exceptions to the timeline must be approved by the Director of the Scholars Program, who serves as Chair to the Organizing Theme Major Committee. The major consists of a total of 12 courses that clearly relate to the organizing theme, at least two of which must be at the 300- or 400-level. In addition, the student must complete a one-term senior thesis or project (ORT 497). Or the student must complete 11 courses (at least two of which much be at the 300- or 400-level) and then a two-term senior thesis or project (ORT 498 and ORT 499). NOTE: When preparing the Organizing Theme Major proposal with the advisor(s), the student must identify these 12 courses, plus several (3-4) more that can stand in as alternates in case some of the courses you choose are not available at the time you wish to take them. It is the student's responsibility to check with departments to verify that the courses are offered in the time frame required. The one- term project (ORT 497) or two-term senior thesis (ORT 498 and ORT 499) must demonstrate an integration of the knowledge and skills gained from the Organizing Theme Major courses that the student has taken. The advisor(s) will direct this senior thesis or project.

Organizing Theme Committee Procedures and Timeline

Procedures:

Initial proposals must be submitted by the end of week 3 of the term when they are to be reviewed, no later than spring term of a student's sophomore year. Exceptions to the timeline must be approved by the Director of the Scholars Program, who serves as Chair to the Organizing Theme Major Committee. Proposals will be reviewed by the Organizing Theme Committee in Week 5 and students will be notified of the committee's decision. The committee may choose to 1) accept the proposal, 2) accept the proposal with revisions, 3) decline the proposal with the option to resubmit, or 4) decline the proposal without the possibility of resubmission. In the case of proposals that are accepted with revisions, revisions must be submitted to the committee chair no later than the end of week 7. Failure to return revisions by the end of week 7 may result in the proposal having to go through another review the following term.

If the proposal is declined with the option to resubmit, the proposal must be resubmitted no later than end of week 3 of the following term. After a 2nd declined attempt, students may ask for a meeting with the committee and their advisor(s) during weeks 8-10 of the term when they receive the 2nd rejection. Students who are not approved twice are strongly encouraged to seek another path for completing their major requirements. Students who are not approved by the end of their junior year may not resubmit their proposals.

Timeline:

- Initial proposals must be submitted no later than spring term of sophomore year
    - Week 3: Proposal deadline
    - Week 5: Proposal review and committee decision
    - Week 7: Deadline for return of revisions to proposals accepted pending revisions
    - Week 8-10: Appeals meetings (if required and requested by the student and advisor after the second rejection of the proposal)
- Students who do not receive final approval by end of junior year must find an alternate route for completing their major requirements.

Changes to an Approved Organizing Theme Major

Any proposed changes to an approved Organizing Theme Major must be approved by the Organizing Theme Major advisor, then by the Organizing Theme Committee. For a revised proposal, use the same online form and be sure to explain the reason for the changes.

If you have any questions or need further information, please contact the Director of the Scholars Program at scholarsdirector@union.edu

Philosophy

Chair: Professor L. Zaibert
Faculty: Associate Professor K. Scheiter; Assistant Professor M. Bergamaschi-Ganapini, Assistant Professor M. Cruz, Assistant Professor D. Friedell
Staff: L. Pelish (Administrative Assistant)

Introductory Courses

Introductory Courses, whether issues-oriented or historically-oriented, do not presuppose any prior acquaintance with philosophy. They may be taken in any order. For more advising information, consult the Philosophy Department website.

Intermediate Courses

Intermediate Courses do not presuppose any prior acquaintance with philosophy. They may be taken in any order; and are pitched at a level that is more appropriate for second and higher year students than for first year students. However, in some cases an order for taking intermediate courses is recommended (for this and other advising information, consult the Philosophy Department website).

Advanced Courses

Advanced courses may be taken in any order, although in some cases certain orders will be recommended. Unlike Introductory and Intermediate courses, most advanced courses presuppose that the student has already taken at least two philosophy courses. Although first and second year students will be allowed to take advanced courses, these courses are pitched at a level that is more appropriate for third and fourth year students.

More advising information

Philosophy (ID), B.A.

Requirements for the Interdepartmental Major:

Eight courses in philosophy, of which two should be numbered 100-level or above, three should be numbered 200-level or above, one should be numbered 300-level or above and two should be numbered 400-level (one of the 400-level courses should be PHL 408 / PHL 418).

Two courses in the history of philosophy must be taken. Two courses that are thematic (M&E, EVT) must be taken.

Thesis is required only for those seeking honors - PHL 497 or PHL 498 and PHL 499.

The eight required courses include:

Two courses in the history of philosophy (H):

PHL 245 - Buddhist Ethics

Course Units: 1.0 Ethics is one of the three main components of the Buddhist path, the others being meditation and wisdom. In the centuries following the Buddha's death, two main branches of Buddhism developed: Theravada Buddhism and Mahayana Buddhism. The older school, Theravada, emphasized moral guidelines and meditation practices that culminate in nirvana; the Mahayana school emphasized a morality of compassion and a metaphysical theory of emptiness. In the contemporary period, Buddhists are concerned about issues relating to the environment, social justice, war, medicine and health, gender, and race. Buddhist ethical theories emphasize selflessness, moral discipline, compassion, karma and awareness. This course draws from ancient ethical texts as well as contemporary works on applying basic Buddhist principles to today's moral problems. **CC:** HUM, LCC **ISP:** REL

PHL 251 - Introduction to Ancient Greek Philosophy

Course Units: 1.0 An examination of issues debated by ancient Greek and Roman philosophers that became central to western philosophy, including the nature of reality, the criteria for knowledge, the difference between good and pleasure, and the principles of political justice. Discussion of readings from the Pre-Socratics, Plato, Aristotle, the Epicureans and the Stoics **Cross-Listed:** CLS 150 **CC:** HUM, GCHF

PHL 311 - Plato's Republic

Course Units: 1.0 Most people care deeply about justice and strive to live just lives. But what is justice and why should we try to be just? What if we always do the right thing, but we are constantly treated badly and as if we are untrustworthy? Should we be just even if others think we are dishonest and corrupt? Is justice worth pursuing for itself? If justice is good how do we make our cities and our fellow citizens just? What kind of ruler would make a city just? In this course we will try to answer these questions as we work our way through Plato's most famous work, Republic. Each class will be organized around specific question(s). We will focus most of our attention on analyzing and interpreting Plato's answer to these questions, but we will also try to answer these questions ourselves and see whether or not we agree with Plato. **Cross-Listed:** CLS 311 **CC:** HUM

PHL 338 - Zen and Tibetan Buddhism

Course Units: 1.0 Mahayana Buddhist philosophy explains the nature of reality as emptiness, which means that the nature of reality is beyond (and thus empty of) words, concepts and characteristics. Mahayana Buddhism also regards compassion as the primary motivation for ethics. This course focuses on the metaphysical theories of two schools of Mahayana Buddhist philosophy: Chinese/Japanese Zen Buddhism and Tibetan Buddhism. The course examines Zen Buddhist theories of No-Self and the nature of mind that makes sudden enlightenment possible, as well as Tibetan Buddhist theories of interdependent arising and emptiness. This course is applicable to the Asian Studies and Religious Studies majors. **CC:** HUM, LCC **ISP:** REL

PHL 341 - The Contemporary Crisis of Truth

Course Units: 1.0 A study of 20th century European or American philosophies: phenomenology, existentialism, or analytic philosophy. **CC:** HUM **ISP:** AMS

PHL 342 - Aristotle

Course Units: 1.0 Aristotle is one of the most influential philosophers in the Western world. His impact spans centuries, influencing ancient Greek and Roman thought, medieval Christian, Arabic, and Jewish thinkers, and even today's philosophers and intellectuals. In this class we will focus mostly on his contribution to metaphysics, philosophy of mind, epistemology, and ethics. What is the nature of reality? How do we come to have knowledge? What constitutes a good human life? These are just some of the questions that we will discuss in the course. **Cross-Listed:** CLS 242 **CC:** HUM

PHL 388 - Skepticism East and West

Course Units: 1.0 For as long as there have been philosophers engaged in passionate pursuit of knowledge, there have been skeptics critical of the entire enterprise. Can we really know the Truth about anything? For that matter, how important is it for us to know the Truth? Skeptical thinkers have appeared in all times and cultures. We will engage with three venerable texts: the Zhuangzi from ancient China, Nagarjuna's writings on the Middle Way from ancient India, and the Outlines of Skepticism by Sextus Empiricus from ancient Greece. Our goal is to put these authors into dialogue and then join in that dialogue. **CC:** LCC

PHL 450 - Hume's Challenge to Reason

Course Units: 1.0 In the eighteenth century, David Hume issued a series of challenges to human reason that ever since have been at the center of much of Western Philosophy. Hume argued that the fundamental principles of philosophy, science, and even morality are based not on reason but on instincts and emotions. This course examines Hume's challenge and how philosophers after Hume (such as Reid, Shepherd, and Kant) have tried to address it. **CC:** HUM, WAC-R, WS

PHL 456 - Seminar: Aristotle on the Soul

Course Units: 1 **Note:** Course can be repeated. Please reach out to the department for additional information.

One course in logic (L):

PHL 125 - Introduction to Logic and Critical Thinking

Course Units: 1.0 A course in informal logic, with a very brief introduction to elementary formal logic. Students will learn to identify, analyze and evaluate English-language arguments in areas ranging from the sciences to current affairs to the law. **CC:** HUM, GSPE

PHL 231 - Symbolic Logic

Course Units: 1.0 An introduction to modern symbolic logic, focusing on translation, semantics and syntax for propositional and predicate logic. You will learn to translate natural language into the language of logic and vice versa, and study key concepts such as validity, consistency, proof, soundness and completeness. **CC:** HUM, QMR **ISP:** LAW

PHL 447 - Advanced Logic

Course Units: 1.0 May be repeated, if topic changes. **Prerequisite(s):** PHL 231 or permission of instructor. **CC:** HUM, WS

At least one course in Metaphysics and Epistemology (M&E):

PHL 232 - Philosophy of Science

Course Units: 1.0 An introduction to philosophy of science. What are scientific theories, and how are they tested? What is scientific method? What counts as evidence for a scientific theory? What is scientific explanation? We will approach these questions both philosophically and through formal techniques. **CC:** HUM **ISP:** STS

PHL 261 - Philosophy of Religion

Course Units: 1.0 Current research in philosophical theology about language, possible worlds, and evidence used to address issues such as whether moral obligation can depend upon God's will, whether God's power is limited by the possible, whether God owns us, whether it is reasonable to bet on the existence of God. **CC:** HUM **ISP:** REL

PHL 265 - Minds and Machines

Course Units: 1.0 Is it possible to build a computer that effectively simulates human intelligence? If we did so, would the computer really be intelligent, or would it merely seem to be: Would the computer have free will? Do we have free will, or is human freedom merely an illusion? Do we have immaterial souls that can survive the deaths of our bodies and brains? In this advanced introduction to the philosophy of mind, we will consider these and other questions about what it means to have a mind, and about the relationship between mind and the brain. **CC:** HUM **ISP:** STS

PHL 266 - Philosophy in Literature

Course Units: 1.0 An examination of the connections between the two disciplines. **CC:** HUL, HUM

PHL 341 - The Contemporary Crisis of Truth

Course Units: 1.0 A study of 20th century European or American philosophies: phenomenology, existentialism, or analytic philosophy. **CC:** HUM **ISP:** AMS

PHL 343 - Metaphysics: On What There Is

Course Units: 1.0 An examination of such topics as determinism and free will, causation, time, personal identity, necessity and possibility, objectivity, and God **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM

PHL 359 - Postmodernism

Course Units: 1.0 Do some groups control the way we use language? Is discourse male-dominated or Euro-centric? Postmodern theories investigate the nature of language, as well as questions concerning power and language: How is power gained and controlled through discourse, the media and other cultural institutions? Postmodern theories have had an impact on contemporary literature, art, and media theory. Readings by Structuralist and Postmodern thinkers, such as Saussure, Barthes, Foucault, Cixous, Irigaray, and Derrida will be discussed. **Cross-Listed:** WGS 359 **Prerequisite(s):** One philosophy course or permission of the instructor. **CC:** HUM

PHL 365 - Philosophy of Mind

Course Units: 1.0 Critical examination of some central issues in the philosophy of mind, including the mind/body problem, the problem of other minds, "intelligent" machines, and animal minds. **CC:** HUM

PHL 388 - Skepticism East and West

Course Units: 1.0 For as long as there have been philosophers engaged in passionate pursuit of knowledge, there have been skeptics critical of the entire enterprise. Can we really know the Truth about anything? For that matter, how important is it for us to know the Truth? Skeptical thinkers have appeared in all times and cultures. We will engage with three venerable texts: the Zhuangzi from ancient China, Nagarjuna's writings on the Middle Way from ancient India, and the Outlines of Skepticism by Sextus Empiricus from ancient Greece. Our goal is to put these authors into dialogue and then join in that dialogue. **CC:** LCC

PHL 445 - Seminar in Metaphysics

Course Units: 1.0 May be repeated, if topic changes. **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM, WS

PHL 446 - Seminar in Epistemology

Course Units: 1.0 Spring Topic: Topics in Philosophy Mind. **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM, WS

At least one course in Ethics & Value (EVT):

PHL 105 - Introduction to Ethics

Course Units: 1.0 An introduction to traditional normative ethical theories, which attempt to provide a rationally defensible account of morally right and wrong conduct and morally good and bad character, and consideration of the challenges posed to these theories by ethical relativism and feminist ethics. **CC:** HUM **ISP:** LAW

PHL 110 - Moral Problems

Course Units: 1.0 An introduction to ethics by considering how a wide variety of reality-based examples of complex and controversial ethical issues might be resolved in a rational manner. **CC:** HUM **ISP:** LAW

PHL 123 - Values and Economic Justice

Course Units: 1.0 This class considers the goals economic policy might pursue and how different theories of the good lead to particular choices about desirable or undesirable economic policies. We consider mainstream economic thinking, which has roots in utilitarianism and liberalism, and alternative ideas such as libertarianism, Austrian economics, feminist, communitarian, and religious philosophy and economics. We apply these ideas to relevant policy issues, such as free trade, globalization, unemployment, income distribution, affirmative action, care of the environment, health care, and famine relief. **Cross-Listed:** ECO 123 **CC:** HUM, JSPE

PHL 180 - Theories of the Good Life

Course Units: 1.0 This course takes a cross-cultural approach to theories of the good life by studying ancient Greek, Chinese, African and Hindu theories, as well as more modern versions of these theories. In class, we shall analyze and debate these theories in terms of their underlying beliefs about human nature and in terms of whether someone can actually live by these theories. **CC:** HUM, LCC **ISP:** REL

PHL 205 - Relativism

Course Units: 1.0 Relativism is not just a 'theoretical' issue: the Events of 9/11 have pitted those who demand 'moral clarity' against those who urge 'more understanding'. Moral disagreement is not limited to conflicts between cultures: democratic societies attempt to accommodate points of view which conflict and diverge, sometimes nearly to the point of violence, as debates on abortion or gay marriage or the separation of church and state, or even taxation, show. But relativism is also an important theoretical issue as it raises questions about truth, justification of belief and moral skepticism. We explore these theoretical, moral and political dimensions through reading of theorists such as Rawls, Nagel, Harman, Thomson, Gutmann, and others. One philosophy course prerequisite or permission of the instructor **CC:** HUM **ISP:** LAW

PHL 237 - Introduction to Political Philosophy

Course Units: 1.0 An historical introduction to issues in political philosophy. The texts that we will consider address questions such as: Why should individuals live in society at all? Why should individuals obey any government at all? What are the sources, limits and purposes of political power? **CC:** HUM **ISP:** LAW

PHL 245 - Buddhist Ethics

Course Units: 1.0 Ethics is one of the three main components of the Buddhist path, the others being meditation and wisdom. In the centuries following the Buddha's death, two main branches of Buddhism developed: Theravada Buddhism and Mahayana Buddhism. The older school, Theravada, emphasized moral guidelines and meditation practices that culminate in nirvana; the Mahayana school emphasized a morality of compassion and a metaphysical theory of emptiness. In the contemporary period, Buddhists are concerned about issues relating to the environment, social justice, war, medicine and health, gender, and race. Buddhist ethical theories emphasize selflessness, moral discipline, compassion, karma and awareness. This course draws from ancient ethical texts as well as contemporary works on applying basic Buddhist principles to today's moral problems. **CC:** HUM, LCC **ISP:** REL

PHL 246 - Art, Media, and Society

Course Units: 1.0 An examination of the traditional aesthetic theories of philosophers such as Plato, Aristotle, Burke, Hume, Schopenhauer, and Nietzsche, as well as more recent theories. Among the issues considered will be how art is different from everyday objects and the impact of technology on art. **CC:** HUM

PHL 248 - Philosophy and Current Affairs

Course Units: 1.0 "Public philosophy" tests the prospects and limits of philosophy as a means of analyzing events and conditions of current interest. We will select an issue, such as affirmative action, the politics of religion, minority rights, the entertainment industry, etc., and track it both in the scholarly and the popular media (newspapers, television, etc.). **CC:** HUM

PHL 250 - Ethical Theory

Course Units: 1.0 Theories such as utilitarianism, pure obligation theory, virtue-ethics, and enlightened self-interest theory propose to provide defensible methods for answering questions about right and wrong. The course examines traditional theories (Aristotle, Hobbes, Kant, Mill, etc.) and contemporary theories (Harman, Rawls, Wolf, Nagel, Gauthier) on issues such as moral skepticism and truth, rational self-interest, care as the basis of ethics, the diversity of moral beliefs, moral trump cards, etc. **CC:** HUM **ISP:** LAW

PHL 255 - On War and Killing

Course Units: 1.0 The central goal of this course is to develop and apply some useful tools for critical reflection upon the morality of war. In considering this issue we will focus on two main questions: (i) that of *jus ad bellum* - what, if anything, makes it right to go to war?, and (ii) that of *jus in bello* - what kinds of actions are, and are not, justified in carrying out a war? **CC:** HUM

PHL 262 - Problem of Evil

Course Units: 1.0 Some actions are bad. Some actions are very bad. Some actions are very, very, very bad. Are there, in addition, actions which are evil? In other words, does "evil" mark out a form of wrongdoing that is qualitatively different from the bad or is it simply a synonym for "bad" or at most a term we reserve for marking a merely

quantitative difference between bad and very bad actions? Much turns on how we decide to answer these questions - concerning both the nature of morality and of the world we inhabit. **CC:** HUM

PHL 263 - Philosophy of Gender and Race

Course Units: 1.0 This course will introduce students to the philosophy of gender and the philosophy of race, with an eye to both theoretical issues and to issues that apply to our everyday lives within a social and political context. **Cross-Listed:** N/A **CC:** HUM **ISP:** AFR, GSW

PHL 274 - Biomedical Ethics

Course Units: 1.0 An introduction to ethical problems in biology and medicine, touching on such issues as reproductive ethics (abortion, cloning), research ethics, the ethics of death and dying (assisted suicide, euthanasia) and similar subjects. **CC:** HUM **ISP:** STS

PHL 297 - The Ethics of Forgiveness and Revenge

Course Units: 1.0 Examination of different ways of responding to wrongdoing. When is revenge appropriate and why? When is forgiveness appropriate and why? **CC:** HUM

PHL 344 - Advanced Political Philosophy

Course Units: 1.0 This course concentrates on issues in contemporary political philosophy. **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM

PHL 374 - Advanced Biomedical Ethics

Course Units: 1.0 An advanced historically based introduction to biomedical ethics. Among the subjects treated will be the relationship between bioethics and traditional medical ethics, the evolution of the discourse, core concepts, models, theories and organizational infrastructure of bioethics, including IRBs and ethics committees. The course is designed to serve as a foundation for graduate work in bioethics and to fulfill the required knowledge competencies recommended by the American Society of Bioethics and Humanities in its 1998 report Core Competencies for Health Care Ethics Consultation. **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM **ISP:** STS

PHL 376 - Philosophy of Law/Jurisprudence

Course Units: 1.0 An advanced course in jurisprudence. Primary topics include: the nature of law and legal reasoning in general; the nature of criminal law, including both the role of excuses in the criminal law and the aims and justification of criminal punishment; and the nature of tort law, including both the relationship between negligence and liability and the relationship between causation and liability **Prerequisite(s):** One philosophy course or permission of the instructor. **Prereq/Corequisite(s):** One course from the Philosophy department. **CC:** HUM

PHL 448 - Seminar in Ethics or Value Theory

Course Units: 1.0 **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM, WAC or WS **Note:** Course may be repeated, if topic changes.

Additional Requirements

PHL 408 - New Directions in Philosophy

Course Units: 0.0 Preparation for biweekly talks by visiting philosophers and development of writing skills. This course extends over two terms. Only one course credit is given. Required of philosophy and interdepartmental majors. During the first term, students sign up for 408; during the second, for 418. Both 408 and 418 may be taken during any year. Because 408 carries no credit, students should register for it in conjunction with three other full-credit courses. Seniors who have not otherwise satisfied their Senior Writing Requirement may do so by taking this course.

PHL 418 - New Directions in Philosophy

Course Units: 1.0 Preparation for biweekly talks by visiting philosophers and development of writing skills. This course extends over two terms. Only one course credit is given. Required of philosophy and interdepartmental majors. During the first term, students sign up for 408; during the second, for 418. Both 408 and 418 may be taken during any year. Because 408 carries no credit, students should register for it in conjunction with three other full-credit courses. Seniors who have not otherwise satisfied their Senior Writing Requirement may do so by taking this course. **CC:** HUM, WS

Requirements for Honors in Philosophy:

To be eligible for departmental honors, the candidate must (1) complete all requirements for a major in Philosophy, or for an ID major in Philosophy and another discipline; (2) have a minimum grade point average of 3.50 in philosophy; (3) have received at least three "A" or "A-" grades in philosophy courses, excluding the PHL 498/ PHL 499; (4) receive a grade of "A" or "A-" on their thesis; (5) publicly defend the thesis; and (6) be voted honors by a committee of three faculty members appointed by the department or, in the case of an ID major, by the Departments. In addition, the candidate must satisfy all College-wide requirements for honors or ID honors.

In satisfying departmental honors requirements, PHL 498 or PHL 499 does not count towards the total number of advanced courses (≥ 400 level) you need to take to fulfill your philosophy major, but both courses do count towards the number of intermediate level courses (≥ 200 level) that you need to take.

Course Selection Guidelines

Course Numbering: While our course numbers reveal levels of difficulty (so that 100-level courses are introductory, 200-level and 300-level courses are intermediate, and 400-level courses are advanced), philosophy courses afford great flexibility. In other words, students, including non-majors, can sometimes take courses at the 200 and 300-level, even if they have not taken an introductory in philosophy. Please contact the professor offering any given course for further information and advice.

Senior Writing Requirement: Students who take Departmental Honors and ID majors who are required to write a senior thesis by their other major Department will satisfy this requirement by writing a senior thesis. All other students will in PHL 408/ PHL 418 significantly develop a paper that they have written.

All students are strongly advised to consult the advising information on the Philosophy Department's Website.

Introductory Courses

Introductory Courses, whether issues-oriented or historically-oriented, do not presuppose any prior acquaintance with philosophy. They may be taken in any order. For more advising information, consult the Philosophy Department website.

Intermediate Courses

Intermediate Courses do not presuppose any prior acquaintance with philosophy. They may be taken in any order; and are pitched at a level that is more appropriate for second and higher year students than for first year students. However, in some cases an order for taking intermediate courses is recommended (for this and other advising information, consult the Philosophy Department website).

Advanced Courses

Advanced courses may be taken in any order, although in some cases certain orders will be recommended. Unlike Introductory and Intermediate courses, most advanced courses presuppose that the student has already taken at least two philosophy courses. Although first and second year students will be allowed to take advanced courses, these courses are pitched at a level that is more appropriate for third and fourth year students. For more advising information, consult https://www.union.edu/academic/majors-minors/philosophy/

Philosophy Minor

Requirements for the Minor:

Six courses in philosophy, of which two should be numbered 100-level or above, three should be numbered 200-level or above, one should be numbered 300-level or above. At least one course must be in the history of philosophy and two must be thematic (EVT, M&E). PHL 408/418 may be taken by permission only. The six courses should include:

One course in the History (H):

i.e., one of the following:

PHL 155 - Seventeenth and Eighteenth Century European Philosophy

Course Units: 1.0 An introduction to philosophy by way of some of the most important European philosophical works of the Seventeenth and Eighteenth Centuries. **CC:** HUM

PHL 160 - Nineteenth and Twentieth Century Philosophy

Course Units: 1.0 An exploration of some of the major trends in the philosophy of the 19th and 20th centuries focusing especially on contemporary skepticism, cultural relativism, the crisis of faith and morality, language, and the metaphysics of truth, as reflected in the contemporary philosophical movements of existentialism, analytic philosophy, phenomenology, and postmodernism. **CC:** HUM

PHL 167 - Chinese Philosophy

Course Units: 1.0 An introductory survey of Confucianism, Daoism, Moism, Yin Yang, Legalism, Neo-Confucianism and Neo-Daoism. Among the theories covered in the course are Confucian theories of self-cultivation, the superior person and human nature, Menzi's theory of original human goodness, Xunzi's theory of evil human nature, Daoist theories of non-action, harmony with nature, and law of reversion, and Moist theories of universal love and non-discrimination. Many of these Chinese theories shaped Chinese civilization for over two millennia. **CC:** HUM, LCC **ISP:** REL

PHL 216 - Introduction to Indian Philosophy

Course Units: 1.0 An introductory survey of Hinduism, Buddhism, Jainism and Carvaka. Over the centuries, Indian philosophers inquired into the nature of reality and mind, debated epistemological issues concerning the criteria for valid knowledge, proposed paths for attaining spiritual liberation, and developed social theories for the welfare of people. Methods used by Indian philosophers include meditation, yoga, reasoning, logic, debate and observation. Some of these methods will be explored in class. **CC:** HUM, LCC **ISP:** REL

PHL 245 - Buddhist Ethics

Course Units: 1.0 Ethics is one of the three main components of the Buddhist path, the others being meditation and wisdom. In the centuries following the Buddha's death, two main branches of Buddhism developed: Theravada Buddhism and Mahayana Buddhism. The older school, Theravada, emphasized moral guidelines and meditation practices that culminate in nirvana; the Mahayana school emphasized a morality of compassion and a metaphysical theory of emptiness. In the contemporary period, Buddhists are concerned about issues relating to the environment, social justice, war, medicine and health, gender, and race. Buddhist ethical theories emphasize selflessness, moral discipline, compassion, karma and awareness. This course draws from ancient ethical texts as well as contemporary works on applying basic Buddhist principles to today's moral problems. **CC:** HUM, LCC **ISP:** REL

PHL 251 - Introduction to Ancient Greek Philosophy

Course Units: 1.0 An examination of issues debated by ancient Greek and Roman philosophers that became central to western philosophy, including the nature of reality, the criteria for knowledge, the difference between good and pleasure, and the principles of political justice. Discussion of readings from the Pre-Socratics, Plato, Aristotle, the Epicureans and the Stoics **Cross-Listed:** CLS 150 **CC:** HUM, GCHF

PHL 338 - Zen and Tibetan Buddhism

Course Units: 1.0 Mahayana Buddhist philosophy explains the nature of reality as emptiness, which means that the nature of reality is beyond (and thus empty of) words, concepts and characteristics. Mahayana Buddhism also regards compassion as the primary motivation for ethics. This course focuses on the metaphysical theories of two schools of Mahayana Buddhist philosophy: Chinese/Japanese Zen Buddhism and Tibetan Buddhism. The course examines Zen Buddhist theories of No-Self and the nature of mind that makes sudden enlightenment possible, as well as Tibetan Buddhist theories of interdependent arising and emptiness. This course is applicable to the Asian Studies and Religious Studies majors. **CC:** HUM, LCC **ISP:** REL

PHL 341 - The Contemporary Crisis of Truth

Course Units: 1.0 A study of 20th century European or American philosophies: phenomenology, existentialism, or analytic philosophy. **CC:** HUM **ISP:** AMS

PHL 450 - Hume's Challenge to Reason

Course Units: 1.0 In the eighteenth century, David Hume issued a series of challenges to human reason that ever since have been at the center of much of Western Philosophy. Hume argued that the fundamental principles of philosophy, science, and even morality are based not on reason but on instincts and emotions. This course examines Hume's challenge and how philosophers after Hume (such as Reid, Shepherd, and Kant) have tried to address it. **CC:** HUM, WAC-R, WS

PHL 456 - Seminar: Aristotle on the Soul

Course Units: 1 **Note:** Course can be repeated. Please reach out to the department for additional information.

And one course in Logic (L):

PHL 125 - Introduction to Logic and Critical Thinking

Course Units: 1.0 A course in informal logic, with a very brief introduction to elementary formal logic. Students will learn to identify, analyze and evaluate English-language arguments in areas ranging from the sciences to current affairs to the law. **CC:** HUM, GSPE

PHL 231 - Symbolic Logic

Course Units: 1.0 An introduction to modern symbolic logic, focusing on translation, semantics and syntax for propositional and predicate logic. You will learn to translate natural language into the language of logic and vice versa, and study key concepts such as validity, consistency, proof, soundness and completeness. **CC:** HUM, QMR **ISP:** LAW

PHL 447 - Advanced Logic

Course Units: 1.0 May be repeated, if topic changes. **Prerequisite(s):** PHL 231 or permission of instructor. **CC:** HUM, WS

At least one course in Metaphysics and Epistemology (M&E):

PHL 232 - Philosophy of Science

Course Units: 1.0 An introduction to philosophy of science. What are scientific theories, and how are they tested? What is scientific method? What counts as evidence for a scientific theory? What is scientific explanation? We will approach these questions both philosophically and through formal techniques. **CC:** HUM **ISP:** STS

PHL 261 - Philosophy of Religion

Course Units: 1.0 Current research in philosophical theology about language, possible worlds, and evidence used to address issues such as whether moral obligation can depend upon God's will, whether God's power is limited by the possible, whether God owns us, whether it is reasonable to bet on the existence of God. **CC:** HUM **ISP:** REL

PHL 265 - Minds and Machines

Course Units: 1.0 Is it possible to build a computer that effectively simulates human intelligence? If we did so, would the computer really be intelligent, or would it merely seem to be: Would the computer have free will? Do we have free will, or is human freedom merely an illusion? Do we have immaterial souls that can survive the deaths of our bodies and brains? In this advanced introduction to the philosophy of mind, we will consider these and other questions about what it means to have a mind, and about the relationship between mind and the brain. **CC:** HUM **ISP:** STS

PHL 266 - Philosophy in Literature

Course Units: 1.0 An examination of the connections between the two disciplines. **CC:** HUL, HUM

PHL 341 - The Contemporary Crisis of Truth

Course Units: 1.0 A study of 20th century European or American philosophies: phenomenology, existentialism, or analytic philosophy. **CC:** HUM **ISP:** AMS

PHL 343 - Metaphysics: On What There Is

Course Units: 1.0 An examination of such topics as determinism and free will, causation, time, personal identity, necessity and possibility, objectivity, and God **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM

PHL 359 - Postmodernism

Course Units: 1.0 Do some groups control the way we use language? Is discourse male-dominated or Euro-centric? Postmodern theories investigate the nature of language, as well as questions concerning power and language: How is power gained and controlled through discourse, the media and other cultural institutions? Postmodern theories have had an impact on contemporary literature, art, and media theory. Readings by Structuralist and Postmodern thinkers, such as Saussure, Barthes, Foucault, Cixous, Irigaray, and Derrida will be discussed. **Cross-Listed:** WGS 359 **Prerequisite(s):** One philosophy course or permission of the instructor. **CC:** HUM

PHL 365 - Philosophy of Mind

Course Units: 1.0 Critical examination of some central issues in the philosophy of mind, including the mind/body problem, the problem of other minds, "intelligent" machines, and animal minds. **CC:** HUM

PHL 445 - Seminar in Metaphysics

Course Units: 1.0 May be repeated, if topic changes. **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM, WS

PHL 446 - Seminar in Epistemology

Course Units: 1.0 Spring Topic: Topics in Philosophy Mind. **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM, WS

At least one course in Ethics & Value (EVT):

PHL 105 - Introduction to Ethics

Course Units: 1.0 An introduction to traditional normative ethical theories, which attempt to provide a rationally defensible account of morally right and wrong conduct and morally good and bad character, and consideration of the challenges posed to these theories by ethical relativism and feminist ethics. **CC:** HUM **ISP:** LAW

PHL 110 - Moral Problems

Course Units: 1.0 An introduction to ethics by considering how a wide variety of reality-based examples of complex and controversial ethical issues might be resolved in a rational manner. **CC:** HUM **ISP:** LAW

PHL 123 - Values and Economic Justice

Course Units: 1.0 This class considers the goals economic policy might pursue and how different theories of the good lead to particular choices about desirable or undesirable economic policies. We consider mainstream economic thinking, which has roots in utilitarianism and liberalism, and alternative ideas such as libertarianism, Austrian economics, feminist, communitarian, and religious philosophy and economics. We apply these ideas to relevant policy issues, such as free trade, globalization, unemployment, income distribution, affirmative action, care of the environment, health care, and famine relief. **Cross-Listed:** ECO 123 **CC:** HUM, JSPE

PHL 180 - Theories of the Good Life

Course Units: 1.0 This course takes a cross-cultural approach to theories of the good life by studying ancient Greek, Chinese, African and Hindu theories, as well as more modern versions of these theories. In class, we shall analyze and debate these theories in terms of their underlying beliefs about human nature and in terms of whether someone can actually live by these theories. **CC:** HUM, LCC **ISP:** REL

PHL 205 - Relativism

Course Units: 1.0 Relativism is not just a 'theoretical' issue: the Events of 9/11 have pitted those who demand 'moral clarity' against those who urge 'more understanding'. Moral disagreement is not limited to conflicts between cultures: democratic societies attempt to accommodate points of view which conflict and diverge, sometimes nearly to the point of violence, as debates on abortion or gay marriage or the separation of church and state, or even taxation, show. But relativism is also an important theoretical issue as it raises questions about truth, justification of belief and moral skepticism. We explore these theoretical, moral and political dimensions through reading of theorists such as Rawls, Nagel, Harman, Thomson, Gutmann, and others. One philosophy course prerequisite or permission of the instructor **CC:** HUM **ISP:** LAW

PHL 237 - Introduction to Political Philosophy

Course Units: 1.0 An historical introduction to issues in political philosophy. The texts that we will consider address questions such as: Why should individuals live in society at all? Why should individuals obey any government at all? What are the sources, limits and purposes of political power? **CC:** HUM **ISP:** LAW

PHL 245 - Buddhist Ethics

Course Units: 1.0 Ethics is one of the three main components of the Buddhist path, the others being meditation and wisdom. In the centuries following the Buddha's death, two main branches of Buddhism developed: Theravada Buddhism and Mahayana Buddhism. The older school, Theravada, emphasized moral guidelines and meditation practices that culminate in nirvana; the Mahayana school emphasized a morality of compassion and a metaphysical theory of emptiness. In the contemporary period, Buddhists are concerned about issues relating to the environment, social justice, war, medicine and health, gender, and race. Buddhist ethical theories emphasize selflessness, moral discipline, compassion, karma and awareness. This course draws from ancient ethical texts as well as contemporary works on applying basic Buddhist principles to today's moral problems. **CC:** HUM, LCC **ISP:** REL

PHL 246 - Art, Media, and Society

Course Units: 1.0 An examination of the traditional aesthetic theories of philosophers such as Plato, Aristotle, Burke, Hume, Schopenhauer, and Nietzsche, as well as more recent theories. Among the issues considered will be how art is different from everyday objects and the impact of technology on art. **CC:** HUM

PHL 248 - Philosophy and Current Affairs

Course Units: 1.0 "Public philosophy" tests the prospects and limits of philosophy as a means of analyzing events and conditions of current interest. We will select an issue, such as affirmative action, the politics of religion, minority rights, the entertainment industry, etc., and track it both in the scholarly and the popular media (newspapers, television, etc.). **CC:** HUM

PHL 250 - Ethical Theory

Course Units: 1.0 Theories such as utilitarianism, pure obligation theory, virtue-ethics, and enlightened self-interest theory propose to provide defensible methods for answering questions about right and wrong. The course examines traditional theories (Aristotle, Hobbes, Kant, Mill, etc.) and contemporary theories (Harman, Rawls, Wolf, Nagel, Gauthier) on issues such as moral skepticism and truth, rational self-interest, care as the basis of ethics, the diversity of moral beliefs, moral trump cards, etc. **CC:** HUM **ISP:** LAW

PHL 255 - On War and Killing

Course Units: 1.0 The central goal of this course is to develop and apply some useful tools for critical reflection upon the morality of war. In considering this issue we will focus on two main questions: (i) that of *jus ad bellum* - what, if anything, makes it right to go to war?, and (ii) that of *jus in bello* - what kinds of actions are, and are not, justified in carrying out a war? **CC:** HUM

PHL 262 - Problem of Evil

Course Units: 1.0 Some actions are bad. Some actions are very bad. Some actions are very, very, very bad. Are there, in addition, actions which are evil? In other words, does "evil" mark out a form of wrongdoing that is qualitatively different from the bad or is it simply a synonym for "bad" or at most a term we reserve for marking a merely quantitative difference between bad and very bad actions? Much turns on how we decide to answer these questions - concerning both the nature of morality and of the world we inhabit. **CC:** HUM

PHL 263 - Philosophy of Gender and Race

Course Units: 1.0 This course will introduce students to the philosophy of gender and the philosophy of race, with an eye to both theoretical issues and to issues that apply to our everyday lives within a social and political context. **Cross-Listed:** N/A **CC:** HUM **ISP:** AFR, GSW

PHL 274 - Biomedical Ethics

Course Units: 1.0 An introduction to ethical problems in biology and medicine, touching on such issues as reproductive ethics (abortion, cloning), research ethics, the ethics of death and dying (assisted suicide, euthanasia) and similar subjects. **CC:** HUM **ISP:** STS

PHL 297 - The Ethics of Forgiveness and Revenge

Course Units: 1.0 Examination of different ways of responding to wrongdoing. When is revenge appropriate and why? When is forgiveness appropriate and why? **CC:** HUM

PHL 344 - Advanced Political Philosophy

Course Units: 1.0 This course concentrates on issues in contemporary political philosophy. **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM

PHL 374 - Advanced Biomedical Ethics

Course Units: 1.0 An advanced historically based introduction to biomedical ethics. Among the subjects treated will be the relationship between bioethics and traditional medical ethics, the evolution of the discourse, core concepts, models, theories and organizational infrastructure of bioethics, including IRBs and ethics committees. The course is designed to serve as a foundation for graduate work in bioethics and to fulfill the required knowledge competencies recommended by the American Society of Bioethics and Humanities in its 1998 report Core Competencies for Health Care Ethics Consultation. **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM **ISP:** STS

PHL 376 - Philosophy of Law/Jurisprudence

Course Units: 1.0 An advanced course in jurisprudence. Primary topics include: the nature of law and legal reasoning in general; the nature of criminal law, including both the role of excuses in the criminal law and the aims and justification of criminal punishment; and the nature of tort law, including both the relationship between negligence and liability and the relationship between causation and liability **Prerequisite(s):** One philosophy course or permission of the instructor. **Prereq/Corequisite(s):** One course from the Philosophy department. **CC:** HUM

PHL 448 - Seminar in Ethics or Value Theory

Course Units: 1.0 **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM, WAC or WS **Note:** Course may be repeated, if topic changes.

Philosophy, B.A.

Requirements for the Major:

Eleven courses in philosophy, of which two should be 100-level or above, four should be 200-level or above, two should be 300-level or above and 3 should be 400-level or above including PHL 408/ PHL 418. Three course in the history of philosophy must be taken, that cover at least two different periods or cultures, of which one should be 300-level or above. Three courses that are thematic (M&E, EVT) must be taken, of which one should be 300-level or above. Thesis is required for only those seeking honors (PHL 498 and PHL 499). The eleven courses should include:

Three courses in History (H):

PHL 216 - Introduction to Indian Philosophy

Course Units: 1.0 An introductory survey of Hinduism, Buddhism, Jainism and Carvaka. Over the centuries, Indian philosophers inquired into the nature of reality and mind, debated epistemological issues concerning the criteria for valid knowledge, proposed paths for attaining spiritual liberation, and developed social theories for the welfare of people. Methods used by Indian philosophers include meditation, yoga, reasoning, logic, debate and observation. Some of these methods will be explored in class. **CC:** HUM, LCC **ISP:** REL

PHL 233 - Early Modern Philosophy

Course Units: 1.0 An examination of some of philosophy's "Greatest Hits," from some of the 17th and 18th centuries' greatest thinkers: Descartes, Leibniz, Locke, Berkeley, Hume, and Kant. We will consider questions like: Is there a God, and how could we know? Is your mind just your brain, or do you have an immaterial soul? What is free will, and are we just fooling ourselves when we think we have it? Does your subjective perception of the world correspond to

how it is in reality, and how can you possibly know? Are there universal moral duties, which everyone has an obligation to follow regardless of their personal inclinations? **CC:** HUM **ISP:** STS

PHL 245 - Buddhist Ethics

Course Units: 1.0 Ethics is one of the three main components of the Buddhist path, the others being meditation and wisdom. In the centuries following the Buddha's death, two main branches of Buddhism developed: Theravada Buddhism and Mahayana Buddhism. The older school, Theravada, emphasized moral guidelines and meditation practices that culminate in nirvana; the Mahayana school emphasized a morality of compassion and a metaphysical theory of emptiness. In the contemporary period, Buddhists are concerned about issues relating to the environment, social justice, war, medicine and health, gender, and race. Buddhist ethical theories emphasize selflessness, moral discipline, compassion, karma and awareness. This course draws from ancient ethical texts as well as contemporary works on applying basic Buddhist principles to today's moral problems. **CC:** HUM, LCC **ISP:** REL

PHL 251 - Introduction to Ancient Greek Philosophy

Course Units: 1.0 An examination of issues debated by ancient Greek and Roman philosophers that became central to western philosophy, including the nature of reality, the criteria for knowledge, the difference between good and pleasure, and the principles of political justice. Discussion of readings from the Pre-Socratics, Plato, Aristotle, the Epicureans and the Stoics **Cross-Listed:** CLS 150 **CC:** HUM, GCHF

PHL 311 - Plato's Republic

Course Units: 1.0 Most people care deeply about justice and strive to live just lives. But what is justice and why should we try to be just? What if we always do the right thing, but we are constantly treated badly and as if we are untrustworthy? Should we be just even if others think we are dishonest and corrupt? Is justice worth pursuing for itself? If justice is good how do we make our cities and our fellow citizens just? What kind of ruler would make a city just? In this course we will try to answer these questions as we work our way through Plato's most famous work, Republic. Each class will be organized around specific question(s). We will focus most of our attention on analyzing and interpreting Plato's answer to these questions, but we will also try to answer these questions ourselves and see whether or not we agree with Plato. **Cross-Listed:** CLS 311 **CC:** HUM

PHL 338 - Zen and Tibetan Buddhism

Course Units: 1.0 Mahayana Buddhist philosophy explains the nature of reality as emptiness, which means that the nature of reality is beyond (and thus empty of) words, concepts and characteristics. Mahayana Buddhism also regards compassion as the primary motivation for ethics. This course focuses on the metaphysical theories of two schools of Mahayana Buddhist philosophy: Chinese/Japanese Zen Buddhism and Tibetan Buddhism. The course examines Zen Buddhist theories of No-Self and the nature of mind that makes sudden enlightenment possible, as well as Tibetan Buddhist theories of interdependent arising and emptiness. This course is applicable to the Asian Studies and Religious Studies majors. **CC:** HUM, LCC **ISP:** REL

PHL 341 - The Contemporary Crisis of Truth

Course Units: 1.0 A study of 20th century European or American philosophies: phenomenology, existentialism, or analytic philosophy. **CC:** HUM **ISP:** AMS

PHL 342 - Aristotle

Course Units: 1.0 Aristotle is one of the most influential philosophers in the Western world. His impact spans centuries, influencing ancient Greek and Roman thought, medieval Christian, Arabic, and Jewish thinkers, and even today's

philosophers and intellectuals. In this class we will focus mostly on his contribution to metaphysics, philosophy of mind, epistemology, and ethics. What is the nature of reality? How do we come to have knowledge? What constitutes a good human life? These are just some of the questions that we will discuss in the course. **Cross-Listed:** CLS 242 **CC:** HUM

PHL 388 - Skepticism East and West

Course Units: 1.0 For as long as there have been philosophers engaged in passionate pursuit of knowledge, there have been skeptics critical of the entire enterprise. Can we really know the Truth about anything? For that matter, how important is it for us to know the Truth? Skeptical thinkers have appeared in all times and cultures. We will engage with three venerable texts: the Zhuangzi from ancient China, Nagarjuna's writings on the Middle Way from ancient India, and the Outlines of Skepticism by Sextus Empiricus from ancient Greece. Our goal is to put these authors into dialogue and then join in that dialogue. **CC:** LCC

PHL 450 - Hume's Challenge to Reason

Course Units: 1.0 In the eighteenth century, David Hume issued a series of challenges to human reason that ever since have been at the center of much of Western Philosophy. Hume argued that the fundamental principles of philosophy, science, and even morality are based not on reason but on instincts and emotions. This course examines Hume's challenge and how philosophers after Hume (such as Reid, Shepherd, and Kant) have tried to address it. **CC:** HUM, WAC-R, WS

PHL 456 - Seminar: Aristotle on the Soul

Course Units: 1 **Note:** Course can be repeated. Please reach out to the department for additional information.

One course in logic (L):

PHL 125 - Introduction to Logic and Critical Thinking

Course Units: 1.0 A course in informal logic, with a very brief introduction to elementary formal logic. Students will learn to identify, analyze and evaluate English-language arguments in areas ranging from the sciences to current affairs to the law. **CC:** HUM, GSPE

PHL 231 - Symbolic Logic

Course Units: 1.0 An introduction to modern symbolic logic, focusing on translation, semantics and syntax for propositional and predicate logic. You will learn to translate natural language into the language of logic and vice versa, and study key concepts such as validity, consistency, proof, soundness and completeness. **CC:** HUM, QMR **ISP:** LAW

PHL 447 - Advanced Logic

Course Units: 1.0 May be repeated, if topic changes. **Prerequisite(s):** PHL 231 or permission of instructor. **CC:** HUM, WS

PHL 448 - Seminar in Ethics or Value Theory

Course Units: 1.0 **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM, WAC or WS **Note:** Course may be repeated, if topic changes.

At least one course in Metaphysics and Epistemology (M&E):

PHL 232 - Philosophy of Science

Course Units: 1.0 An introduction to philosophy of science. What are scientific theories, and how are they tested? What is scientific method? What counts as evidence for a scientific theory? What is scientific explanation? We will approach these questions both philosophically and through formal techniques. **CC:** HUM **ISP:** STS

PHL 261 - Philosophy of Religion

Course Units: 1.0 Current research in philosophical theology about language, possible worlds, and evidence used to address issues such as whether moral obligation can depend upon God's will, whether God's power is limited by the possible, whether God owns us, whether it is reasonable to bet on the existence of God. **CC:** HUM **ISP:** REL

PHL 265 - Minds and Machines

Course Units: 1.0 Is it possible to build a computer that effectively simulates human intelligence? If we did so, would the computer really be intelligent, or would it merely seem to be: Would the computer have free will? Do we have free will, or is human freedom merely an illusion? Do we have immaterial souls that can survive the deaths of our bodies and brains? In this advanced introduction to the philosophy of mind, we will consider these and other questions about what it means to have a mind, and about the relationship between mind and the brain. **CC:** HUM **ISP:** STS

PHL 266 - Philosophy in Literature

Course Units: 1.0 An examination of the connections between the two disciplines. **CC:** HUL, HUM

PHL 341 - The Contemporary Crisis of Truth

Course Units: 1.0 A study of 20th century European or American philosophies: phenomenology, existentialism, or analytic philosophy. **CC:** HUM **ISP:** AMS

PHL 343 - Metaphysics: On What There Is

Course Units: 1.0 An examination of such topics as determinism and free will, causation, time, personal identity, necessity and possibility, objectivity, and God **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM

PHL 359 - Postmodernism

Course Units: 1.0 Do some groups control the way we use language? Is discourse male-dominated or Euro-centric? Postmodern theories investigate the nature of language, as well as questions concerning power and language: How is power gained and controlled through discourse, the media and other cultural institutions? Postmodern theories have had an impact on contemporary literature, art, and media theory. Readings by Structuralist and Postmodern thinkers, such as Saussure, Barthes, Foucault, Cixous, Irigaray, and Derrida will be discussed. **Cross-Listed:** WGS 359 **Prerequisite(s):** One philosophy course or permission of the instructor. **CC:** HUM

PHL 365 - Philosophy of Mind

Course Units: 1.0 Critical examination of some central issues in the philosophy of mind, including the mind/body problem, the problem of other minds, "intelligent" machines, and animal minds. **CC:** HUM

PHL 445 - Seminar in Metaphysics

Course Units: 1.0 May be repeated, if topic changes. **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM, WS

PHL 446 - Seminar in Epistemology

Course Units: 1.0 Spring Topic: Topics in Philosophy Mind. **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM, WS

At least one course in Ethics & Value (EVT):

PHL 105 - Introduction to Ethics

Course Units: 1.0 An introduction to traditional normative ethical theories, which attempt to provide a rationally defensible account of morally right and wrong conduct and morally good and bad character, and consideration of the challenges posed to these theories by ethical relativism and feminist ethics. **CC:** HUM **ISP:** LAW

PHL 110 - Moral Problems

Course Units: 1.0 An introduction to ethics by considering how a wide variety of reality-based examples of complex and controversial ethical issues might be resolved in a rational manner. **CC:** HUM **ISP:** LAW

PHL 123 - Values and Economic Justice

Course Units: 1.0 This class considers the goals economic policy might pursue and how different theories of the good lead to particular choices about desirable or undesirable economic policies. We consider mainstream economic thinking, which has roots in utilitarianism and liberalism, and alternative ideas such as libertarianism, Austrian economics, feminist, communitarian, and religious philosophy and economics. We apply these ideas to relevant policy issues, such as free trade, globalization, unemployment, income distribution, affirmative action, care of the environment, health care, and famine relief. **Cross-Listed:** ECO 123 **CC:** HUM, JSPE

PHL 180 - Theories of the Good Life

Course Units: 1.0 This course takes a cross-cultural approach to theories of the good life by studying ancient Greek, Chinese, African and Hindu theories, as well as more modern versions of these theories. In class, we shall analyze and debate these theories in terms of their underlying beliefs about human nature and in terms of whether someone can actually live by these theories. **CC:** HUM, LCC **ISP:** REL

PHL 237 - Introduction to Political Philosophy

Course Units: 1.0 An historical introduction to issues in political philosophy. The texts that we will consider address questions such as: Why should individuals live in society at all? Why should individuals obey any government at all? What are the sources, limits and purposes of political power? **CC:** HUM **ISP:** LAW

PHL 245 - Buddhist Ethics

Course Units: 1.0 Ethics is one of the three main components of the Buddhist path, the others being meditation and wisdom. In the centuries following the Buddha's death, two main branches of Buddhism developed: Theravada Buddhism and Mahayana Buddhism. The older school, Theravada, emphasized moral guidelines and meditation practices that culminate in nirvana; the Mahayana school emphasized a morality of compassion and a metaphysical theory of emptiness. In the contemporary period, Buddhists are concerned about issues relating to the environment, social justice, war, medicine and health, gender, and race. Buddhist ethical theories emphasize selflessness, moral discipline, compassion, karma and awareness. This course draws from ancient ethical texts as well as contemporary works on applying basic Buddhist principles to today's moral problems. **CC:** HUM, LCC **ISP:** REL

PHL 246 - Art, Media, and Society

Course Units: 1.0 An examination of the traditional aesthetic theories of philosophers such as Plato, Aristotle, Burke, Hume, Schopenhauer, and Nietzsche, as well as more recent theories. Among the issues considered will be how art is different from everyday objects and the impact of technology on art. **CC:** HUM

PHL 248 - Philosophy and Current Affairs

Course Units: 1.0 "Public philosophy" tests the prospects and limits of philosophy as a means of analyzing events and conditions of current interest. We will select an issue, such as affirmative action, the politics of religion, minority rights, the entertainment industry, etc., and track it both in the scholarly and the popular media (newspapers, television, etc.). **CC:** HUM

PHL 250 - Ethical Theory

Course Units: 1.0 Theories such as utilitarianism, pure obligation theory, virtue-ethics, and enlightened self-interest theory propose to provide defensible methods for answering questions about right and wrong. The course examines traditional theories (Aristotle, Hobbes, Kant, Mill, etc.) and contemporary theories (Harman, Rawls, Wolf, Nagel, Gauthier) on issues such as moral skepticism and truth, rational self-interest, care as the basis of ethics, the diversity of moral beliefs, moral trump cards, etc. **CC:** HUM **ISP:** LAW

PHL 255 - On War and Killing

Course Units: 1.0 The central goal of this course is to develop and apply some useful tools for critical reflection upon the morality of war. In considering this issue we will focus on two main questions: (i) that of *jus ad bellum* - what, if anything, makes it right to go to war?, and (ii) that of *jus in bello* - what kinds of actions are, and are not, justified in carrying out a war? **CC:** HUM

PHL 263 - Philosophy of Gender and Race

Course Units: 1.0 This course will introduce students to the philosophy of gender and the philosophy of race, with an eye to both theoretical issues and to issues that apply to our everyday lives within a social and political context. **Cross-Listed:** N/A **CC:** HUM **ISP:** AFR, GSW

PHL 274 - Biomedical Ethics

Course Units: 1.0 An introduction to ethical problems in biology and medicine, touching on such issues as reproductive ethics (abortion, cloning), research ethics, the ethics of death and dying (assisted suicide, euthanasia) and similar subjects. **CC:** HUM **ISP:** STS

PHL 297 - The Ethics of Forgiveness and Revenge

Course Units: 1.0 Examination of different ways of responding to wrongdoing. When is revenge appropriate and why? When is forgiveness appropriate and why? **CC:** HUM

PHL 376 - Philosophy of Law/Jurisprudence

Course Units: 1.0 An advanced course in jurisprudence. Primary topics include: the nature of law and legal reasoning in general; the nature of criminal law, including both the role of excuses in the criminal law and the aims and justification of criminal punishment; and the nature of tort law, including both the relationship between negligence and liability and the relationship between causation and liability **Prerequisite(s):** One philosophy course or permission of the instructor. **Prereq/Corequisite(s):** One course from the Philosophy department. **CC:** HUM

PHL 448 - Seminar in Ethics or Value Theory

Course Units: 1.0 **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM, WAC or WS **Note:** Course may be repeated, if topic changes.

Additional Requirements:

PHL 408 - New Directions in Philosophy

Course Units: 0.0 Preparation for biweekly talks by visiting philosophers and development of writing skills. This course extends over two terms. Only one course credit is given. Required of philosophy and interdepartmental majors. During the first term, students sign up for 408; during the second, for 418. Both 408 and 418 may be taken during any year. Because 408 carries no credit, students should register for it in conjunction with three other full-credit courses. Seniors who have not otherwise satisfied their Senior Writing Requirement may do so by taking this course.

PHL 418 - New Directions in Philosophy

Course Units: 1.0 Preparation for biweekly talks by visiting philosophers and development of writing skills. This course extends over two terms. Only one course credit is given. Required of philosophy and interdepartmental majors. During the first term, students sign up for 408; during the second, for 418. Both 408 and 418 may be taken during any year. Because 408 carries no credit, students should register for it in conjunction with three other full-credit courses. Seniors who have not otherwise satisfied their Senior Writing Requirement may do so by taking this course. **CC:** HUM, WS

Requirements for Honors in Philosophy:

To be eligible for departmental honors, the candidate must (1) complete all requirements for a major in Philosophy, or for an ID major in Philosophy and another discipline; (2) have a minimum grade point average of 3.50 in philosophy; (3) have received at least three "A" or "A-" grades in philosophy courses, excluding the PHL 498/ PHL 499; (4) receive a grade of "A" or "A-" on their thesis; (5) publicly defend the thesis; and (6) be voted honors by a committee of three faculty members appointed by the department or, in the case of an ID major, by the Departments. In addition, the candidate must satisfy all College-wide requirements for honors or ID honors.

In satisfying departmental honors requirements, PHL 498 or PHL 499 does not count towards the total number of advanced courses (≥ 400 level) you need to take to fulfill your philosophy major, but both courses do count towards the number of intermediate level courses (≥ 200 level) that you need to take.

Course Selection Guidelines

Course Numbering: While our course numbers reveal levels of difficulty (so that 100-level courses are introductory, 200-level and 300-level courses are intermediate, and 400-level courses are advanced), philosophy courses afford great flexibility. In other words, students, including non-majors, can sometimes take courses at the 200 and 300-level, even if they have not taken an introductory in philosophy. Please contact the professor offering any given course for further information and advice.

Senior Writing Requirement: Students who take Departmental Honors and ID majors who are required to write a senior thesis by their other major Department will satisfy this requirement by writing a senior thesis. All other students will in PHL 408/ PHL 418 significantly develop a paper that they have written.

All students are strongly advised to consult the advising information on the Philosophy Department's Website.

Introductory Courses

Introductory Courses, whether issues-oriented or historically-oriented, do not presuppose any prior acquaintance with philosophy. They may be taken in any order. For more advising information, consult the Philosophy Department website.

Intermediate Courses

Intermediate Courses do not presuppose any prior acquaintance with philosophy. They may be taken in any order; and are pitched at a level that is more appropriate for second and higher year students than for first year students. However, in some cases an order for taking intermediate courses is recommended (for this and other advising information, consult the Philosophy Department website).

Advanced Courses

Advanced courses may be taken in any order, although in some cases certain orders will be recommended. Unlike Introductory and Intermediate courses, most advanced courses presuppose that the student has already taken at least two philosophy courses. Although first and second year students will be allowed to take advanced courses, these courses are pitched at a level that is more appropriate for third and fourth year students. For more advising information, consult https://www.union.edu/academic/majors-minors/philosophy/

Physics

Chair: Associate Professor S. Amanuel
Faculty: Professors R. Koopmann, S. Maleki, M. Vineyard (on Leave, Fall); Associate Professor C. Orzel, N. Mann, H. Watson; Assistant Professor C. Bores Quijano; Senior Lecturer S. LaBrake, J. Marr, F. Wilkin; Visiting Assistant Professor C. Gleason
Staff: J. Sheehan (Technician), L. Stec (Administrative Assistant)

The Physics and Astronomy Department offers a bachelor of science degree in Physics as well as minors in Astronomy, Astrophysics, and Physics. Example 4-year schedules are available on the Department of Physics & Astronomy website. The Physics and Astronomy Department offers a bachelor of science degree in Physics as well as minors in Astronomy, Astrophysics, and Physics.

Common Curriculum (CC) Courses

Courses numbered in the 050's are designed particularly for non-science majors seeking to satisfy Common Curriculum requirements, and all of these courses carry Common Curriculum credit. These courses may count toward the major in astronomy or the interdepartmental major (see requirements for the Astronomy major and Astronomy ID major), but they may not be counted toward the major in physics or toward any other science or engineering major.

Course Selection Guidelines

Placement: Students who score a grade of 4 or 5 on the Advanced Placement C-exam (mechanics and/or electromagnetics), an A on the physics A-levels, a 5 or above on the Higher Level or a 6 or above on the standard exam of the International Baccalaureate (provided they earn the IB diploma), may be given credit for up to a maximum of two courses (PHY 120 and/or PHY 121). If a student does not earn the IB diploma, they will be given credit only if they pass the higher level exam with a grade of 6 or above. Students who score a grade of 4 or 5 on both the Physics 1 and Physics 2 AP exams will earn one SET credit in Physics.

Courses Suitable for Non-Majors: The following courses are designed to fulfill the Science and Technology Common Curriculum requirement (some of these courses have labs and some do not): AST 050 , AST 051 , AST 052 , and AST 058 . Life-science students should take PHY 110 -PHY 111 . Engineering and physical-science students should take PHY 120 -PHY 121 . Other courses suitable for selected non-majors include AST 150 , AST 200 , AST 210 , AST 220 , AST 230 , AST 240 , PHY 122 , PHY 123 , PHY 200 and PHY 210 .

Prerequisites: There are no placement test requirements for courses in the Department of Physics and Astronomy. All courses numbered above 100 have prerequisites. Please review the course descriptions to identify the requirements.

Physics (ID), B.S.

Requirements for the Interdepartmental Major:

Students taking physics or astronomy as part of an 8-6 interdepartmental major program can choose from either a conceptual or a calculus track. Suitable choices of courses numbered in the 50s, as well as independent study courses 495-498, can count toward the *conceptual track* ID major (such as Arts and Astronomy or History of Astronomy). Suitable choices of courses numbered 100 or greater can count toward a *calculus track* ID major (such as Astrobiology or Geophysics). For any of these ID majors, a written proposal must be submitted by the student, in consultation with their faculty advisor, for approval by the Department of Physics and Astronomy.

Requirements for the Leadership in Medicine Program:

Students in the Leadership in Medicine program whose science emphasis is in physics should take the following seven courses: PHY 110, PHY 111 (both already core courses), PHY 122, PHY 123, PHY 200, PHY 210, and one additional course from PHY 220, PHY 230, PHY 270, PHY 310, or PHY 311 in consultation with their physics adviser.

Physics Minor

Requirements for the Minor:

The Department of Physics and Astronomy offers academic minors in physics, astronomy, and astrophysics.

Students wishing to minor in physics should take:

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

PHY 122 - Relativity, Quantum, and Their Applications

Course Units: 1.0 Calculus-based introduction to the structure of matter, including quantum effects, particle, nuclear, atomic, molecular, and solid state physics, and applications to materials of interest to engineers and scientists. **Prerequisite(s):** PHY 121 IMP 113 or IMP 121 . **Corequisite(s):** PHY-122L **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

And three other PHY courses at 100-level or higher in consultation with the Department.

If a life science student:

PHY 110 - Physics for the Life Sciences 1

Course Units: 1.0 An introduction to classical mechanics, fluids, and thermodynamics with applications in the life sciences. Students must major in a life science or be admitted by permission of the instructor. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **Corequisite(s):** PHY 110L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

PHY 111 - Physics for the Life Sciences 2

Course Units: 1.0 An introduction to electromagnetism, optics, and the structure of matter with applications in the life sciences. **Prerequisite(s):** PHY 110 , PHY 120 ,MTH 102 , MTH 112 ,or MTH 113 **Corequisite(s):** PHY 111L **CC:** SCLB **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

PHY 200 - Molecular Biophysics

Course Units: 1.0 Selected topics in molecular biophysics including an overview of proteins, nucleic acids, viruses and bacteria, with an emphasis on molecular structure and functioning. Experimental techniques used in modern biophysical research included in the course are various optical spectroscopies and microscopies, as well as hydrodynamic methods (sedimentation, diffusion, viscosity, electrophoresis), NMR, and x-ray diffraction. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 , and some exposure to biology or permission of the instructor.

PHY 210 - The Physics of Modern Medicine: Applications in Imaging, Surgery and Therapy

Course Units: 1.0 This course introduces the technologies used in modern medicine and the basic physical principles that underlie them. Topics will include: laser surgery, ultrasound imaging, laparoscopic surgery, diagnostic x-ray imaging, nuclear medicine, computed tomography (CAT) scans, magnetic resonance imaging (MRI) scans, and radiation therapy. Safety issues involved in the use of each technique will be considered in depth, and discussions will include societal implications of the growing use of technology in medicine. Specific medical applications discussed will include (but are not limited to): colon cancer screening, arthroscopic knee surgery, laser eye surgery, dermatological laser surgery, obstetrical ultrasound, cardiovascular ultrasound, mammography, osteoporosis screening, cancer radiation therapy, and applications of PET and MRI brain scans in neuroscience. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 , or permission of the instructor. **CC:** WAC

- And two other PHY courses at 100-level or higher in consultation with the Department

Physics, B.S.

Requirements for the Physics Major:

Ten required courses in physics:

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

PHY 122 - Relativity, Quantum, and Their Applications

Course Units: 1.0 Calculus-based introduction to the structure of matter, including quantum effects, particle, nuclear, atomic, molecular, and solid state physics, and applications to materials of interest to engineers and scientists. **Prerequisite(s):** PHY 121 IMP 113 or IMP 121 . **Corequisite(s):** PHY-122L **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

PHY 123 - Heat and Light

Course Units: 1.0 Calculus-based introduction to thermodynamics, geometric and physical optics, and astrophysics. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 121 or IMP 121 . **CC:** ENS

PHY 220 - Relativity and Introduction to Quantum Mechanics

Course Units: 1.0 A second course in modern physics covering special relativity and an introduction to quantum mechanics. Topics include relativistic kinematics, relativistic dynamics, four-vector notation, relativistic collisions, origins of quantum mechanics, Schrodinger's equation and the development of wave mechanics, applications of wave mechanics in one and three dimensions (step potential, square well, harmonic oscillator), angular momentum operators, the hydrogen atom, Dirac notation and matrix formulation of linear operators, Dirac Delta function, spin angular momentum, measurement theory, and time-independent perturbation theory. **Prerequisite(s):** PHY 122 **CC:** ENS **Lecture/Lab Hours** One hour computational lab each week.

PHY 230 - Intermediate Classical Mechanics

Course Units: 1.0 An analytical treatment of classical mechanics. Topics include motion of a particle in one, two, and three dimensions; planetary motion; collision theory; moving coordinate systems; dynamics of rigid bodies; and the Lagrangian form of the equations of motion. **Prerequisite(s):** PHY 110 or PHY 120 or IMP

120 **Prereq/Corequisite(s):** MTH 117 (pre- or co-requisite), or permission of the instructor. **Lecture/Lab Hours** One hour computational lab each week.

PHY 270 - Intermediate Electromagnetism

Course Units: 1.0 Electric and magnetic fields and potentials; electric and magnetic properties of matter; Maxwell's field equations. **Prerequisite(s):** PHY 121 and MTH 117 or IMP 121 , or permission of the instructor. **Lecture/Lab Hours** One hour computational lab each week.

PHY 300 - Methods of Modern Experimental Physics

Course Units: 1.0 A laboratory-based course dealing with contemporary techniques in experimental physics. **Prerequisite(s):** PHY 122 and one physics course at the 200-level or higher, or permission of the instructor. **CC:** WAC **ISP:** ENS

PHY 310 - Advanced Topics in Physics 1

Course Units: 1.0 Course topic for each year to be chosen from the following: Computational Physics: A laboratory-based course providing practical tools to solve computational physics problems drawn from a wide range of areas, including classical mechanics, electromagnetism, special relativity, and quantum mechanics. Algorithms include root-finders, integration techniques, Monte Carlo methods, ordinary and partial differential equation solvers, numerical Fourier transforms, minimization tools, and numerical linear algebra algorithms. Condensed Matter Physics: An introduction to the microscopic structures and to the electrical and thermal properties of metals, insulators, and semiconductors. Topics include the description of crystal lattices, electrons in a periodic potential, electronic band theory, phonons and their interactions with electrons, cohesive energy of solids, defect states, and superconductivity. Modern Physical Optics: Interference, diffraction and polarization of light, interaction of light and matter, classical and quantum description of optics, and lasers. Three-hour lab each week. Nuclear/Elementary Particle Physics: An introduction to both nuclear and particle physics covering basic nuclear structure and properties, nuclear models, nuclear decay and radioactivity, nuclear reactions, fission, fusion, accelerators, elementary particle physics, and the quark model. Statistical Mechanics: Probability theory, laws of thermodynamics, kinetic theory of gases and the statistical basis of thermodynamics, Bose Einstein and Fermi Dirac distributions, applications to simple fluids, magnetic systems, metals, photons, and superfluid helium. Advanced Electromagnetism: Relativistic electrodynamics, electromagnetic radiation and waves. Quantum Optics: The study of the interaction of light and matter in systems where the wave nature of matter and the particle nature of light must be taken into account. Topics may include single-photon interference, correlated photons and the EPR paradox, quantum computing, quantum cryptography and quantum teleportation, atom optics and atom interferometry, laser cooling and Bose-Einstein Condensation, and implications of quantum mechanics for nanomaterials and nanodevices. Electronics: A laboratory course in basic electronics and instrumentation for science majors. Topics include AC and DC circuits, diodes, rectifiers, transistors, operational amplifiers, binary logic, Boolean algebra, digital circuits, analog-digital conversion, transducers, and computer interfacing. Six hours of lab each week. Others depending upon student interest. **Prerequisite(s):** Course open to juniors and seniors only. Enrollment by permission of the instructor. **ISP:** ENS

or

PHY 311 - Advanced Topics in Physics 2

Course Units: 1.0 Course topic for each year to be chosen from those listed in Physics 310 depending upon student interest. Course open to juniors and seniors only. Enrollment by permission of the instructor. **Prerequisite(s):** PHY 122 **CC:** WAC

Physics 010 Requirement

A passing grade in PHY 010 (zero credit) is required for all students completing their WS requirement.

Including the WS requirement

Physics majors may fulfill the WS requirement through a one-term (PHY 493) thesis or literature review project, through a two-term senior thesis (PHY 490 and PHY 491), through thesis research in another department (if a double major or ID major), or through an additional writing component added to an upper-level course (with permission of the instructor and the Department).

Two Term Thesis Option:

PHY 490 - Physics Two-Term Senior Thesis 1

Course Units: 0.0 The student will normally begin a research project by the fall of the senior year under the supervision of a faculty member; interested students are encouraged to begin research projects earlier in their studies. All students involved in research will meet together once a week with a faculty member who will organize oral reports by the students based on their progress. A written report is required on completion of the project. **Prereq/Corequisite(s):** Completion of PHY 491 earns the total credits.

PHY 491 - Physics Two-Term Senior Thesis 2

Course Units: 2.0 The student will normally begin a research project by the fall of the senior year under the supervision of a faculty member; interested students are encouraged to begin research projects earlier in their studies. All students involved in research will meet together once a week with a faculty member who will organize oral reports by the students based on their progress. A written report is required on completion of the project. **Prerequisite(s):** PHY 490 **CC:** WS

One Term Thesis Option:

PHY 493 - Physics Senior Writing Project

Course Units: 1.0 The student will normally begin a research project by the fall of the senior year under the supervision of a faculty member; interested students are encouraged to begin research projects earlier in their studies. All students involved in research will meet together once a week with a faculty member who will organize oral reports by the students based on their progress. A written report is required on completion of the project. **Corequisite(s):** Fall term students attend PHY 490 Lectures. **CC:** WS

Additional Requirements

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

and

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

and

- Two other electives selected from any science, engineering, or computer science courses numbered 100 or above; at least one of which must be taken outside of the department.

and

- Students are expected to attend the weekly departmental colloquium series to gain an appreciation for current research in physics and related areas.

Curriculum for those attending graduate school:

For those students wishing to consider graduate work in physics or a closely related discipline (e.g., astronomy, materials science, applied physics), the department advises the following curriculum:

Physics

PHY 120 - Matter in Motion

Course Units: 1.0 Calculus-based introduction to classical mechanics; Newtonian dynamics and energetics of a single particle and of systems of particles. Integrated class and lab meets four times each week. **Prerequisite(s):** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently). **CC:** SCLB, GNPS **ISP:** ENS

PHY 121 - Principles of Electromagnetics

Course Units: 1.0 Calculus-based introduction to waves, electro and magneto statics, and electrodynamics through Maxwell's equations. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 120 or IMP 120 **and** MTH 102 or MTH 112 or MTH 113 (may be taken concurrently) **CC:** SCLB, GNPS **ISP:** ENS

PHY 122 - Relativity, Quantum, and Their Applications

Course Units: 1.0 Calculus-based introduction to the structure of matter, including quantum effects, particle, nuclear, atomic, molecular, and solid state physics, and applications to materials of interest to engineers and scientists. **Prerequisite(s):** PHY 121 IMP 113 or IMP 121 . **Corequisite(s):** PHY-122L **Lecture/Lab Hours** Three lab hours each week. **ISP:** ENS

PHY 123 - Heat and Light

Course Units: 1.0 Calculus-based introduction to thermodynamics, geometric and physical optics, and astrophysics. Integrated class and lab meets four times each week. **Prerequisite(s):** PHY 121 or IMP 121 . **CC:** ENS

PHY 220 - Relativity and Introduction to Quantum Mechanics

Course Units: 1.0 A second course in modern physics covering special relativity and an introduction to quantum mechanics. Topics include relativistic kinematics, relativistic dynamics, four-vector notation, relativistic collisions, origins of quantum mechanics, Schrodinger's equation and the development of wave mechanics, applications of wave mechanics in one and three dimensions (step potential, square well, harmonic oscillator), angular momentum operators, the hydrogen atom, Dirac notation and matrix formulation of linear operators, Dirac Delta function, spin angular momentum, measurement theory, and time-independent perturbation theory. **Prerequisite(s):** PHY 122 **CC:** ENS **Lecture/Lab Hours** One hour computational lab each week.

PHY 230 - Intermediate Classical Mechanics

Course Units: 1.0 An analytical treatment of classical mechanics. Topics include motion of a particle in one, two, and three dimensions; planetary motion; collision theory; moving coordinate systems; dynamics of rigid bodies; and the Lagrangian form of the equations of motion. **Prerequisite(s):** PHY 110 or PHY 120 or IMP 120 **Prereq/Corequisite(s):** MTH 117 (pre- or co-requisite), or permission of the instructor. **Lecture/Lab Hours** One hour computational lab each week.

PHY 270 - Intermediate Electromagnetism

Course Units: 1.0 Electric and magnetic fields and potentials; electric and magnetic properties of matter; Maxwell's field equations. **Prerequisite(s):** PHY 121 and MTH 117 or IMP 121 , or permission of the instructor. **Lecture/Lab Hours** One hour computational lab each week.

PHY 300 - Methods of Modern Experimental Physics

Course Units: 1.0 A laboratory-based course dealing with contemporary techniques in experimental physics. **Prerequisite(s):** PHY 122 and one physics course at the 200-level or higher, or permission of the instructor. **CC:** WAC **ISP:** ENS

PHY 310 - Advanced Topics in Physics 1

Course Units: 1.0 Course topic for each year to be chosen from the following: Computational Physics: A laboratory-based course providing practical tools to solve computational physics problems drawn from a wide range of areas, including classical mechanics, electromagnetism, special relativity, and quantum mechanics. Algorithms include root-finders, integration techniques, Monte Carlo methods, ordinary and partial differential equation solvers, numerical Fourier transforms, minimization tools, and numerical linear algebra algorithms. Condensed Matter Physics: An introduction to the microscopic structures and to the electrical and thermal properties of metals, insulators, and semiconductors. Topics include the description of crystal lattices, electrons in a periodic potential, electronic band theory, phonons and their interactions with electrons, cohesive energy of solids, defect states, and superconductivity. Modern Physical Optics: Interference, diffraction and polarization of light, interaction of light and matter, classical and quantum description of optics, and lasers. Three-hour lab each week. Nuclear/Elementary Particle Physics: An introduction to both nuclear and particle physics covering basic nuclear structure and properties, nuclear models, nuclear decay and radioactivity, nuclear reactions, fission, fusion, accelerators, elementary particle physics, and the quark model. Statistical Mechanics: Probability theory, laws of thermodynamics, kinetic theory of gases and the statistical basis of thermodynamics, Bose Einstein and Fermi Dirac distributions, applications to simple fluids, magnetic systems, metals, photons, and superfluid helium. Advanced Electromagnetism: Relativistic electrodynamics, electromagnetic radiation and waves. Quantum Optics: The study of the interaction of light and matter in systems where the wave nature of matter and the particle nature of light must be taken into account. Topics may include single-photon interference, correlated photons and the EPR paradox, quantum computing, quantum cryptography and quantum teleportation, atom optics and atom interferometry, laser cooling and Bose-Einstein Condensation, and implications of quantum mechanics for nanomaterials and nanodevices. Electronics: A laboratory course in basic electronics and instrumentation for science majors. Topics include AC and DC circuits, diodes, rectifiers, transistors, operational amplifiers, binary logic, Boolean algebra, digital circuits, analog-digital conversion, transducers, and computer interfacing. Six hours of lab each week. Others depending upon student interest. **Prerequisite(s):** Course open to juniors and seniors only. Enrollment by permission of the instructor. **ISP:** ENS

PHY 311 - Advanced Topics in Physics 2

Course Units: 1.0 Course topic for each year to be chosen from those listed in Physics 310 depending upon student interest. Course open to juniors and seniors only. Enrollment by permission of the instructor. **Prerequisite(s):** PHY 122 **CC:** WAC

PHY 350 - Advanced Quantum Mechanics

Course Units: 1.0 A second course in quantum mechanics with applications to selected problems in atomic, nuclear, and solid state physics. **Prerequisite(s):** PHY 220 and MTH 117 , or permission of the instructor.

PHY 490 - Physics Two-Term Senior Thesis 1

Course Units: 0.0 The student will normally begin a research project by the fall of the senior year under the supervision of a faculty member; interested students are encouraged to begin research projects earlier in their studies. All students involved in research will meet together once a week with a faculty member who will organize oral reports by the students based on their progress. A written report is required on completion of the project. **Prereq/Corequisite(s):** Completion of PHY 491 earns the total credits.

PHY 491 - Physics Two-Term Senior Thesis 2

Course Units: 2.0 The student will normally begin a research project by the fall of the senior year under the supervision of a faculty member; interested students are encouraged to begin research projects earlier in their studies. All students involved in research will meet together once a week with a faculty member who will organize oral reports by the students based on their progress. A written report is required on completion of the project. **Prerequisite(s):** PHY 490 **CC:** WS

Math

MTH 115 - Calculus 3: Differential Vector Calculus and Matrix Theory

Course Units: 1.0 Geometry of 3-space, differential calculus of functions of several variables, linear systems, matrices. **Note:** Not open to students who have taken IMP 120 ,or IMP 121 . **Prerequisite(s):** MTH 112, or MTH 113 **CC:** QMR

MTH 117 - Calculus 4: Integral Vector Calculus

Course Units: 1.0 Double and triple integrals, line integrals and Green's theorem, divergence and curl, divergence theorem and Stokes' theorem. **Note:** Not open to students who have completed IMP 120 or IMP 121 . **Prerequisite(s):** MTH 115 or MTH 115H **CC:** QMR

and

MTH 130 - Ordinary Differential Equations

Course Units: 1.0 Topics include first and second-order differential equations and first-order systems, including analytic, geometric, and numerical techniques, classification of first-order linear systems by eigenvalues, forcing and resonance, and the Laplace transform. Applications include but are not limited to population models, RC circuits, and damped and undamped harmonic oscillators. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 **Note:** Not open to students who have passed MTH 234 . **CC:** GDQR

Students considering graduate school are also strongly encouraged to take electives from the following:

PHY 200 - Molecular Biophysics

Course Units: 1.0 Selected topics in molecular biophysics including an overview of proteins, nucleic acids, viruses and bacteria, with an emphasis on molecular structure and functioning. Experimental techniques used in modern biophysical research included in the course are various optical spectroscopies and microscopies, as well as hydrodynamic methods (sedimentation, diffusion, viscosity, electrophoresis), NMR, and x-ray diffraction. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 , and some exposure to biology or permission of the instructor.

PHY 210 - The Physics of Modern Medicine: Applications in Imaging, Surgery and Therapy

Course Units: 1.0 This course introduces the technologies used in modern medicine and the basic physical principles that underlie them. Topics will include: laser surgery, ultrasound imaging, laparoscopic surgery, diagnostic x-ray imaging, nuclear medicine, computed tomography (CAT) scans, magnetic resonance imaging (MRI) scans, and radiation therapy. Safety issues involved in the use of each technique will be considered in depth, and discussions will include societal implications of the growing use of technology in medicine. Specific medical applications discussed will include (but are not limited to): colon cancer screening, arthroscopic knee surgery, laser eye surgery, dermatological laser surgery, obstetrical ultrasound, cardiovascular ultrasound, mammography, osteoporosis screening, cancer radiation therapy, and applications of PET and MRI brain scans in neuroscience. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 , or permission of the instructor. **CC:** WAC

PHY 312 - Advanced Topics in Physics 3

Course Units: 1.0 Course topic for each year to be chosen from those listed in Physics 310 depending upon student interest. Course open to juniors and seniors only. Enrollment by permission of the instructor.

Astronomy

AST 200 - Stellar Structure and Evolution

Course Units: 1.0 An examination of the physical principles governing the structure and evolution of stars. Topics include radiation laws, and the determination of stellar temperature, luminosity, and composition; radiative transfer and the interior structure of stars; nuclear fusion and nucleosynthesis; star clusters and stellar evolution; and stellar remnants (white dwarfs, neutron stars, pulsars, and black holes). **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121

AST 210 - Galaxies

Course Units: 1.0 A survey of the physical properties, dynamics, and distribution of galaxies. Topics include the content, formation, and evolution of the Milky Way and other galaxies; the large-scale distribution of galaxies; interactions between galaxies; dark matter; active galactic nuclei; and quasars. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 113 or IMP 121 .

AST 220 - Cosmology and General Relativity

Course Units: 1.0 A detailed study of the universe. Topics include an introduction to general relativity; the shape, size, age, and future of the universe; models of the primordial universe, including the Big Bang Theory and the Inflation

Theory; the origin of the elements; dark matter; the cosmic background radiation; and the formation of galaxies. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 , and MTH 115 . PHY 122 is recommended.

AST 230 - Observational Astronomy

Course Units: 1.0 A laboratory-based course dealing with modern astronomical techniques. The course work will involve primarily nighttime observations with a 20-inch telescope and computer analysis of the data. Techniques covered include CCD observations, sky subtraction, spectroscopy, and photometry. Student projects may include determination of the distances and ages of star clusters; measurements of the variability of stars and of quasars; measurements of the masses of Jupiter, binary star systems, and galaxies; and determination of orbits of asteroids. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 113 or IMP 121 or permission of the instructor (with some telescope experience). **CC:** WAC, WAC-R

AST 240 - Radio Astronomy

Course Units: 1.0 A laboratory-based course in the observing methods and the astrophysics learned from astronomical studies at radio wavelengths. Topics include the operation of a radio telescope; important emission mechanisms; star formation regions; interstellar gas; interstellar molecular clouds; radio galaxies; and the cosmic microwave background. Student projects will involve observations with Union's 2-meter radio telescope and with the 37-meter radio telescope at the Haystack Observatory in Westford, Massachusetts. **Prerequisite(s):** PHY 111 or PHY 121 or IMP 121 ; Recommended: MTH 115

Computer Science

- Any 100-level course

Math

MTH 127 - Numerical Methods

Course Units: 1.0 Newton's method, numerical differentiation and integration, solution of ordinary differential equations, error estimates. **Prerequisite(s):** MTH 115 and fluency in some mathematical programming language.

MTH 140 - Applied Linear Algebra

Course Units: 1.0 Linear algebra has an enormous number of applications to the sciences and engineering. This course will cover the basics of linear algebra in Euclidean n-space, including linear systems, linear transformations, determinants, eigenvalues and eigenvectors, orthogonality, and the singular value decomposition. An emphasis will be placed on applications, chosen from least-squares fitting, linear programming, image compression, Markov chains and discrete dynamical systems, computer graphics, principal component analysis, the Google PageRank algorithm, and others. Computer software such as MATLAB or Mathematica will be used in this course to perform numerical calculations. **Prerequisite(s):** MTH 115, MTH 115H or IMP 121 . **Note:** Credit will not normally be given for both MTH 140 and MTH 340 . Exceptions require approval of a proposal from the student to the department chair.

Electrical and Computer Engineering

ECE 225 - Electric Circuits

Course Units: 1.0 Basic electrical circuit concepts and devices such as Ohm's law, Kirchhoff's laws, Thevenin and Norton equivalents, operational amplifiers, analysis methods, capacitors, inductors, ideal transformers, phasors, AC

steady state analysis, complex power, frequency response and filters. Includes a weekly lab. Not open to Mechanical Engineering major **Cross-Listed:** BME 225 **Prerequisite(s):** MTH 112 or MTH 113 **Corequisite(s):** ECE 225L

Possible Substitution Courses

For students interested in pursuing careers that do not require graduate work in physics, some substitutions of courses in engineering will be considered by the department. Students must request formal approval from the Department of Physics and Astronomy for any such substitution. Examples include:

MER 212 - Dynamics

Course Units: 1.0 A basic engineering mechanics course concerned with the kinematics and kinetics of non-deformable particles and two dimensional bodies undergoing acceleratory motion. D'Alembert free body diagrams, Newtonian mechanics, energy approaches, vectors and the calculus are used to solve problems throughout the course. Topics include kinematics, force and acceleration, work and energy principles and impulse and momentum principles. Includes a design component. **Prerequisite(s):** MER 201 and (MTH 115 or IMP 121)

for

PHY 230 - Intermediate Classical Mechanics

Course Units: 1.0 An analytical treatment of classical mechanics. Topics include motion of a particle in one, two, and three dimensions; planetary motion; collision theory; moving coordinate systems; dynamics of rigid bodies; and the Lagrangian form of the equations of motion. **Prerequisite(s):** PHY 110 or PHY 120 or IMP 120 **Prereq/Corequisite(s):** MTH 117 (pre- or co-requisite), or permission of the instructor. **Lecture/Lab Hours** One hour computational lab each week.

ECE 343 - Introduction to Electromagnetic Engineering

Course Units: 1.0 Traveling waves: transmission lines; electrostatics; magnetostatics; applications to engineering problems; solutions by analytical and numerical techniques. **Prerequisite(s):** ECE 240, (MTH 117 and PHY 121) or IMP 120 **Corequisite(s):** ECE 343L **Lecture/Lab Hours** One lab per week.

for

PHY 270 - Intermediate Electromagnetism

Course Units: 1.0 Electric and magnetic fields and potentials; electric and magnetic properties of matter; Maxwell's field equations. **Prerequisite(s):** PHY 121 and MTH 117 or IMP 121 , or permission of the instructor. **Lecture/Lab Hours** One hour computational lab each week.

Requirements for Honors in Physics and Astronomy:

In addition to the requirements for the major, the student must take PHY 491, submit an honors thesis, and satisfy College requirements for departmental honors.

Requirements for the Leadership in Medicine Program:

Students in the Leadership in Medicine program whose science emphasis is in physics should take the following seven courses: PHY 110, PHY 111 (both already core courses), PHY 122, PHY 123, PHY 200, PHY 210, and one additional course from PHY 220, PHY 230, PHY 270, PHY 310, or PHY 311 in consultation with their physics adviser.

Political Science

Chair: Professor G. Seri
Faculty: Professors M. Angrist, C. Brown, C. Cidam, M. Dallas (on leave until the end of Fall 2025), R. Hislope (on leave in the Spring 2025), L. Marso, Z. Oxley, G. Seri; Associate Professor B. Hays; Assistant Professor S. Benegal

The Political Science Department helps build within students the knowledge, skills, and desire to be lifelong public and global citizens. Students are challenged to think critically about their beliefs and understandings of the world around them, while developing the language, analytical and writing skills necessary for them to present these ideas effectively to others. Beyond the classroom we hope to provide students with the inspiration and opportunities to engage with politics in its multiple forms and locations. We offer instruction in the four traditional subfields of the discipline of Political Science: Political Theory, Comparative Politics, International Politics, and United States Politics.

For a listing of all the Political Science courses broken down by category, please go to Course Listing and select the Prefix PSC.

Political Science (ID), B.A.

Requirements for the Interdepartmental Major:

Eight courses in the department, including:

PSC 111 - Introduction to US Politics

Course Units: 1.0 A broad overview of the operation and issues of central concern in the study of U.S. politics. Particular attention is paid to evaluating the U.S. governing system in relation to major theories of political power, such as elitism, pluralism, and populism. In examining these and other broad concepts there is a focus on the foundations, institutions, and linkage mechanisms (political parties, media, etc.) that play a critical role in U.S. politics. Depending on the instructor, topics covered often include: the founding period, U.S. political culture, civil rights and liberties, money and politics, campaigns and elections, the role of mass media, parties and interest groups, politics in the post 9/11 era, and public policies focusing on crime, foreign affairs, the environment, poverty, health care, and war. **CC:** SOCS, JSPE **ISP:** AMS

or

PSC 112 - Introduction to Global Politics

Course Units: 1.0 An overview of 21st century dynamics that shape national politics in different regional settings, the behavior of states in the world arena, and how global actors impact each other. Depending on the instructor, topics to be explored could include war, terrorism, political economy, historical perspectives, cultural tensions, nation-building and development, imperialism, democracy, balance of power, human rights, emerging institutions, and the world's ecology. In all sections, attention will be paid to the development of political arguments, the critical use of concepts and theories, and strategies of making judgments about globalization and about the impact of international affairs on domestic politics and vice-versa. **CC:** SOCS, GCHF, GSPE **ISP:** REE

and

PSC 113 - Introduction to Political Thought

Course Units: 1.0 This course examines key ideas and concepts, as well as "eternal" questions, in the history of western political thought. We will ask controversial questions such as: What is justice? Can we achieve democracy without

eliminating poverty? What are the qualities of a good leader? Should we even have leaders? Can women be philosopher-kings? How does class struggle affect the participation of citizens? What are the qualities of a "good" citizen? These questions have been debated for over 2500 years. The debate continues in this course as we learn what the major thinkers said about these issues. **CC:** SOCS **ISP:** LAW

IDM 498 - Interdepartmental Senior Thesis 1

Course Units: 0.0 For interdepartmental majors who are pursuing a two term senior thesis. The first half is graded Pass or Fail. **CC:** WS

IDM 499 - Interdepartmental Senior Thesis 2

Course Units: 2.0 Second half of a two term senior thesis. **Prerequisite(s):** IDM 498 **CC:** WS

Note: The senior thesis is a two-term project, one term of which counts toward the Political Science portion of the ID major. The Department of Political Science requires its ID majors to choose a senior thesis topic that incorporates elements of both disciplines, and to seek out appropriate guidance regarding the contributions of the second discipline to the project.

Internship courses, such as PSC 277 and PSC 280T, may not be counted toward the eight courses required for the interdepartmental major.

*Beginning with the Class of 2021, at least one 300-level course.

At least one "R" course to fulfill the research requirement.

Requirements for Honors in Political Science:

To receive departmental honors the student must fulfill the following requirements: (1) a minimum index of 3.50 in political science; (2) completion of a political science seminar with a grade of "A minus" or better; (3) a grade of "A minus" or higher on the senior project, and (4) delivery of an oral presentation of the senior project research at the Steinmetz Symposium unless exceptional circumstances warrant an alternative forum. Students who do not attain an A minus or better grade in the seminar may still be eligible for honors if their departmental grade point average is 3.70 or higher. In addition the student must satisfy College requirements for departmental honors, which are described in the Academic Policies section of this catalog. **Note:** Students must take a seminar to qualify for honors.

Course Selection Guidelines

Placement: Students who received a score of 4 or 5 on the Advanced Placement exam for U.S. Government and Politics may earn credit for PSC 111. Students who earned a 4 or 5 on the Comparative Government and Politics Advanced Placement exam may earn one unspecified political science course credit. Credits earned from Advanced Placement exams can count toward the Political Science major or minor.

Course Numbering: These guidelines are offered so that students may make informed choices in the selection of courses appropriate to their level of education. 200-level political science courses are oriented towards a wide student audience from across the College whereas 300-level courses are focused more on advanced political science issues and therefore are more appropriate for upper-class political science majors as well as interested juniors and seniors from other majors. For subfield-specific descriptions of 200 and 300-level courses, please go to Course Listings and select the Prefix PSC.

It is important for students to know that 200-level courses are not "easier" than 300-level courses in terms of reading load, course assignments, or the amount of work and effort expected of students. That said, as a general rule, 300-level

courses will be more theoretically and/or conceptually dense. Non-majors are welcome, but should understand that such courses typically will demand that students embrace key theories, concepts, frameworks, and/or methods in the discipline.

Political Science Minor

Requirements for the Minor:

Six courses including:

Note: No internships or independent studies may be counted toward the minor without approval of the Chair.

PSC 111 - Introduction to US Politics

Course Units: 1.0 A broad overview of the operation and issues of central concern in the study of U.S. politics. Particular attention is paid to evaluating the U.S. governing system in relation to major theories of political power, such as elitism, pluralism, and populism. In examining these and other broad concepts there is a focus on the foundations, institutions, and linkage mechanisms (political parties, media, etc.) that play a critical role in U.S. politics. Depending on the instructor, topics covered often include: the founding period, U.S. political culture, civil rights and liberties, money and politics, campaigns and elections, the role of mass media, parties and interest groups, politics in the post 9/11 era, and public policies focusing on crime, foreign affairs, the environment, poverty, health care, and war. **CC:** SOCS, JSPE **ISP:** AMS

or

PSC 112 - Introduction to Global Politics

Course Units: 1.0 An overview of 21st century dynamics that shape national politics in different regional settings, the behavior of states in the world arena, and how global actors impact each other. Depending on the instructor, topics to be explored could include war, terrorism, political economy, historical perspectives, cultural tensions, nation-building and development, imperialism, democracy, balance of power, human rights, emerging institutions, and the world's ecology. In all sections, attention will be paid to the development of political arguments, the critical use of concepts and theories, and strategies of making judgments about globalization and about the impact of international affairs on domestic politics and vice-versa. **CC:** SOCS, GCHF, GSPE **ISP:** REE

and

PSC 113 - Introduction to Political Thought

Course Units: 1.0 This course examines key ideas and concepts, as well as "eternal" questions, in the history of western political thought. We will ask controversial questions such as: What is justice? Can we achieve democracy without eliminating poverty? What are the qualities of a good leader? Should we even have leaders? Can women be philosopher-kings? How does class struggle affect the participation of citizens? What are the qualities of a "good" citizen? These questions have been debated for over 2500 years. The debate continues in this course as we learn what the major thinkers said about these issues. **CC:** SOCS **ISP:** LAW

Of the four remaining courses, at least three upper-level courses must all be drawn from one of the following four sub-fields:

Political Theory:

PSC 230 - Ancient Political Thought

Course Units: 1.0 Examines the ideas of major political thinkers in ancient philosophy. Potential themes include the tension between philosophy and politics, the nature of democracy, the relationship between war and political life, debates concerning how to live a "good life," the political significance of poetry and art, and the body/mind duality. Thinkers and texts that may be covered include Homer, Thucydides, Plato, Aristotle, the Greek poets, Saint Augustine, Thomas Aquinas, and the Bible. **CC:** SOCS

PSC 231 - Theories of Peace and War

Course Units: 1.0 Do aggression and violence arise from individuals or groups, from nations, global forces, or from entire civilizations? Is warfare an eliminable pathology or just part of the human condition? Any answer to these questions ultimately involves ontological claims on how things are, key in shaping the ways in which we imagine and inhabit our world. This course revisits arguments on peace, war, and violence central in the tradition of Western political thought. By exploring works of classical, modern, and contemporary political thinkers, contextualized in reference to key cases, we will identify and critically assess contentious explanations and philosophical justifications.

PSC 232 - Violence and Politics

Course Units: 1.0 What is the relationship between violence and politics? Is politics a continuation of violent struggle through other means? Or is there a fundamental difference between the two? What is the relationship between legal order and violence? What is the role of violence in resisting different forms oppression? Can the use of violence ever be morally justifiable? If so, when and why? This political theory course aims to inquire into these challenging questions by studying the theoretical debates on the relationship between violence and politics with a special emphasis on questions related to the relationship between legal order, constitution of the state, and the use of violence both in support of, and in opposition to, the existing order. During the course of the term, we will focus on debates surrounding difference forms of violence in embedded in our legal systems, look at examples of resistance movements, assess different arguments made in defense of nonviolent and violent methods of resistance, analyze different conceptions of civil disobedience, and grapple with the question of how representations of violence affect our judgments about its legitimacy and/or justification. **CC:** SOCS **ISP:** LAW

PSC 234 - Women Political Theorists

Course Units: 1.0 Where are all the women in the history of political thought? Some thinkers we explore throughout history include Mary Astell, Mary Wollstonecraft, Harriet Taylor Mill, and Emma Goldman. Their work will prepare us to discuss the political and social thought of three prominent women thinkers of the 20th century: Simone de Beauvoir, Iris Murdoch, and Hannah Arendt. We investigate questions concerning freedom and contingency, responsibility, the nature of self in relation to others, and the limits and scope of ethical action in the work of these theorists. Women political theorists often write novels, short stories, and autobiography/biography (rather than philosophical texts) to explore political and philosophical themes. Consequently, we will be reading novels and autobiography along with political philosophy to think about the relationship between philosophy, politics, and literature. We will also be interested in considering how living their lives as women might have influenced the way these philosophers viewed major political and intellectual issues of the day. **CC:** SOCS **ISP:** GSWS

PSC 235 - African American Political Thought

Course Units: 1.0 This course will introduce students to the critical and constructive dimensions of African American political thought. We will assess the claims that Black Americans have made on the polity, how they define themselves, and how they have sought to redefine the basic terms of American public life. **CC:** SOCS, WAC **ISP:** AFR, AMS, GSWS

PSC 236 - Police, Security and Biopower

Course Units: 1.0 While the development of a political community presupposes a certain level of security, the second half of the 20th century shows how unfortunately frequent it has become for people to turn into victims of the devices they set to secure themselves. How can the tensions between the political and security be addressed to enhance, not to destroy, the freedom and creativity that characterize a political community? Organized as a seminar, and heavy in contemporary political theory, this course will explore both practical and theoretical relations between political communities and the pre-political preconditions for their preservation. **CC:** LCC, SOCS **ISP:** LAS

PSC 237 - Music and Politics

Course Units: 1.0 This class explores the multiple relationships between music and politics with a specific focus on the following dimensions: (1) the use of music as a lens to perceive the world, to frame injustices, to inform political discourse, to raise consciousness, and to mobilize public opinion; (2) the political context in which critically significant music is produced; (3) biographical details of artists that bring understanding to the art they produce; (4) the impact of class, race, ethnicity, and gender on music; (5) the interpretation of political messages found in music; and (6) the intentional and unintentional political consequences of popular music. **CC:** SOCS **ISP:** AMS, LAS

PSC 239 - American Political Thought Through the Progressive Era

Course Units: 1.0 Political thought in America from the colonial period until World War I with an emphasis on evolving political, social, cultural, and intellectual perspectives on enlightenment values, nationalism, slavery, the rise of the industrial economy, the political machine, and America's changing role in the world. **CC:** SOCS **ISP:** AMS

PSC 330 - Enlightenment and Its Discontents

Course Units: 1.0 Is there a politics to the "age of reason?" This course focuses on enlightenment thought and its critics, in the modern as well as the contemporary era. We will inquire about the role of reason in setting the terms of citizenship, including how the citizen should behave. Is reason a male attribute? Does passion and/or religion play a role in reasonable thinking? The historical span of this course will generally cover the 17th to the 19th centuries and show how we have come to think about politics the way we do today. **CC:** SOCS

PSC 333 - Twenty-First Century American Political Thought

Course Units: 1.0 An exploration of political thinking in regard to the multiple crises the United States faces in the 21st century. Potential topics include threats to democracy in the United States by right wing groups and White Supremacy; specific challenges of structural racism, gender inequity, police violence, guns; social movements such as Black Lives Matter, #metoo, the Sunrise Movement; and the historical meanings of individualism, diversity, freedom, imperialism, and Western expansion in the US. **CC:** SOCS **ISP:** AFR, AMS, GSW

PSC 334 - Contemporary Continental Theory

Course Units: 1.0 In the latter half of the twentieth century, theorists working in the continental tradition have developed new approaches to modern political concerns about the power of the state, the possibility of democracy, the importance of language, media and rhetoric, and the connections between knowledge, ethics, religion and politics. Students in this course will grapple with some of the most important figures and theories at the leading edge of this tradition. While this course presumes no background in continental theory, students must be prepared to wrestle with difficult texts, ideas and thinkers. Authors may include: Agamben, Badiou, Butler, Cavarero, Cavell, Deleuze, Derrida, Fanon, Foucault, Ranciere, Zizek. **CC:** SOCS, WAC, WAC-R **ISP:** REE

PSC 339 - Seminar: Political Theory

Course Units: 1.0 Selected topics in political theory. Content will vary from year to year. Preference to sophomore and junior political science majors. **CC:** SOCS, WAC **ISP:** AFR, GSWS

PSC 434 - Feminist Film

Course Units: 1.0 Using 10 films as our "texts" we will examine the role of women in society, the diversity of women's lives, the impact of gender roles in various cultural contexts, the possibility of alternative sexualities and ways of living, and whether we can say what constitutes a "feminist film." The course is focused on discussion of, and writing about, the films but includes analysis of feminist political theory and feminist film theory to provide tools for better interpretation. **CC:** SOCS **ISP:** AMS, FLM, GSWS

Comparative Politics:

PSC 201T - Cambodia Study Abroad: Crossing Cultures

Course Units: 1.0 This class is geared towards deepening students' understanding of Cambodian history, culture and contemporary society. During Winter term (prior to the beginning of class in Spring term), there are two weeks of instruction designed to give students academic background on political and economic development, and a brief primer on 20th century and contemporary Cambodian history, politics, economy, and society. However, the core of the class is the experience in-country during spring term. This will consist of classroom study, lectures by in-country experts, excursions to learn and interact with the broader society, and will help students to excel in their internships with local NGOs. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing.

PSC 213 - Contemporary China: Politics, Economy and Society

Course Units: 1.0 A survey course on the politics of the People's Republic of China, with an emphasis on state-society relations. After briefly introducing the Republican and state socialist eras, the heart of the course provides a historical and topical overview of the contemporary political and economic reforms in China. It explores topics in Chinese domestic politics, such as policy-making, center-local relations, inequality, rural transformation, industrialization, village elections, the rule of law and contentious politics, in addition to China's relationship with the outside world, including its integration into the international economy, the environment, energy and foreign policy. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AIS

PSC 216 - Politics in Africa

Course Units: 1.0 This course is designed to introduce students to the essential political history and political dynamics of contemporary Sub-Saharan Africa. By the end of the term, students will have developed an understanding of the process through which the states of contemporary Sub-Saharan Africa emerged; the types of political systems that have evolved in these states; ethnicity and ethnic conflict in Africa; inter and intra-state wars on the continent and their impact; the challenges of economic development and securing prosperity for Africa; and gender and politics, religion and politics, and the politics of terrorism in Africa. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **ISP:** AFR

PSC 240 - Comparative Ethnic and Racial Politics

Course Units: 1.0 An introduction to the trends and patterns of ethnic conflicts in the contemporary world. Issues pertaining to the rise of nations; theories of ethnic mobilization; the attempt to build general, cross-national

explanations; and current efforts to solve ethnic conflict. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS **ISP:** AMS, REE

PSC 242 - Comparative Climate Change Politics

Course Units: 1 This year we have seen historic temperature records and heatwaves across the globe, the impacts of wildfires around the country and locally, and periods of drought and extreme storms in different areas. These have been attributed to or amplified by anthropogenic climate change, which is one of the biggest challenges facing society in the 21st century. This course examines why climate change is such a "wicked problem," and why it is so difficult to address effectively. The barriers to addressing climate change are not just technical and scientific, but also political and social. Thinking about a future where we as a society mitigate the worst impacts of climate change this century, and adapt to other impacts entails navigating different political systems around the world and balancing various geopolitical and economic interests. Through this course, we will examine how these factors shape or constrain efforts to address climate change in Western Europe, the United States, China, India, and other parts of the world. We will also examine how climate change is impacting human life and security in these countries and other parts of the world, and how it may amplify existing inequalities and other crises. **ISP:** ENS, STS

PSC 243 - Latin American Politics

Course Units: 1.0 This course offers a working knowledge of Latin America's current politics, trends, and challenges. Years after democratization, regular elections are in place, and support for democracy in the region seems widespread. Still, as local traditions infuse the principles of liberal democracy, politics in Latin America reveal unique traits. Exploring the political as an interpretive endeavor, the course's readings, assignments, and class discussions will help to identify key political institutions, traditions, and cleavages, as well as forms of agency and leadership, both in specific countries and at the regional level. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** LAS

PSC 245 - Populisms in Latin America & Beyond

Course Units: 1.0 Leadership and politics in Latin America are often characterized as populist, but there is widespread disagreement as to what populism is. Claimed by no one, most of the time populism is blamed, disapprovingly, upon leaders and movements connoting demagoguery, manipulative appeals to people's emotions and disregard for formal institutions and rules. Interestingly, a similar characterization of populism has recently entered politics in countries such as France or the U.S. With a main focus on Latin America, extending the discussion outside the region, this course scrutinizes three different "populist moments," from the first half of the 20th century to the present. Major figures such as Peron or Vargas; neoliberal reformers from the 1990s, from Fujimori to Menem, and recent Latin American leaders, from Chávez, to Fernandez de Kirchner, plus a few salient cases from outside the region (e.g. Trump, Le Pen) will be examined in the class. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** LAS

PSC 246 - Asian Development: Industrialization Beyond the West

Course Units: 1.0 How did some Asian countries become the first non-Western countries to achieve high-income status, near elimination of poverty, a highly educated and healthy population, leading edge technology and in some cases robust democracies and even admirably equal distributions of wealth? And how did they come to compete with the West, often on terms set by Western countries, despite the West's much earlier industrialization, and the vast geographic and cultural distances? Are answers to be found in politics and institutions? Culture? Resources and demography? Historical effects of imperialism? Regionalism? After a brief comparison of pre-modern China and Europe, the course focuses on the 'miracle' of Japanese industrialization from the late 19th to early 20th century, as well as Japan's combination of industrialization and militarization on the road to World War Two. This is followed by post-World War Two Japan and the four Asian Tigers (South Korea, Taiwan, Hong Kong and Singapore), before focusing on the return of China since the 1980s, and Southeast Asia within the Asian region. This is a reading intensive course,

though no background in Asia, political science or economics is required **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AIS, AMS

PSC 247 - Human (In) Security in a Comparative Perspective

Course Units: 1.0 With a focus on "the daily lives of ordinary people", the recent tradition of Human Security redefines safety as "freedom from fear and freedom from want." At the interface of security, development, and Human Rights grounding democratization, Human Security adopts the perspective of the common citizen, calling for collaboration between states and international and grassroots organizations to prevent and eliminate obstacles undermining people's autonomy, rights, and development. This course aims, first, to provide students with a solid conceptual and applied knowledge of Human Security. Second, by learning about the deep-seated conditions that hinder people's safety from fear and from want, students will gain a thicker perspective on the structural challenges for peace and democracy around the world through the eyes of the people on the ground. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, GSPE **ISP:** GSW, LAS

PSC 248 - The Politics of the New Europe

Course Units: 1.0 A survey of contemporary European politics including topics such as the emerging European Union, the rise of right-wing movements, growing regional and sectional conflict, patterns of immigration, and debate about the very meaning of "Europe." **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** REE

PSC 249 - Middle East Politics

Course Units: 1.0 This course is designed to introduce students to the essential political history and dynamics of the Middle East in the 20th century. Students will study the processes through which the states of the contemporary Middle East emerged; the types of political regimes that have evolved in these states; the origins and evolution of the Arab-Israeli conflict; the relationships between Islam and politics; and debates regarding U.S. foreign policy toward the region. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS

PSC 340 - Politics and Film

Course Units: 1.0 This course explores political themes through the rigorous viewing of feature films and documentaries from the United States and abroad. Films present differing perspectives on the subject. Themes include war, revolution, counter-revolution, role of the individual in social conflict, and US intervention in foreign lands. Class requires critical analysis of the films, supplementary readings, and six conceptual-analytical papers. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, FLM

PSC 341 - Genocide

Course Units: 1.0 Genocide is humanity's greatest and most enduring scourge. After the horrific Holocaust, the world's leaders cried out, "Never Again." Sadly, genocide has occurred, again and again, wherein mass murders, ethnic cleansing, mass rape and pillaging, has taken place in countless places and times since World War II. This course examines examples, causes and motives, position of the perpetrators, victims and bystanders. We shall also look at proposals for avoiding or preventing genocide, perhaps through some form of international humanitarian intervention, or "responsibility to protect." **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS

PSC 342R - Challenges to Democratization in Latin America

Course Units: 1.0 **(Not Offered this Academic Year)** Democracies in Latin America confront a number of challenges, obstacles, and dilemmas that frequently put their continuity at risk. This course explores five thematic clusters. Social indicators on rights and inequality, political identities and citizenship, political and legal institutions, life and economic

growth, and public safety, crime, and state violence. A preoccupation with some of the most urgent challenges faced by democracy in the region will also lead us to assess actual and potential alternatives. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS **ISP:** LAS

PSC 343 - Women and Politics in the Muslim World

Course Units: 1.0 In this course we will study how politics and women intersect across the Muslim world, including the Middle East, Sub-Saharan Africa, Central Asia, and South Asia. Empirically, we will investigate the varied paths women's rights have taken in different national settings while examining similarities and differences in the degree to which women wield social, economic, and political power in their respective countries. We will seek theoretical explanation for women's status in the region, which varies significantly from country to country. Sample topics for discussion include the Koran and women, debates about the veil, honor killings, the impacts of oil, war, and foreign intervention on women's status, and Muslim female prime ministers and presidents. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** GSWS, REL

PSC 346 - Technologies in Society: Power, Politics and Economy across Industrial Revolutions

Course Units: 1.0 With the advent of the internet, robotics, Big Data, artificial intelligence and machine learning, we are already well into a Third (some say 'Fourth') Industrial Revolution. If history is any guide, this industrial revolution is transforming society, politics and culture in ways both overt and subtle. Further, as it diffuses, it will not be replicated identically across time and space. This course compares the first, second and third industrial revolutions - selectively focusing on the advent of factories/machines, mass production and information technologies, respectively. For each revolution, the course asks three questions 1) how value is created, 2) who controls and benefits from the new modes of production and consumption, and 3) how it transforms and is transformed by its social and political contexts. Second, it explores variation across different national political economies, most prominently in the advanced countries of England, the US, Europe and Japan, with selective comparisons to other developing countries, including China today. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, GCHF, GSPE **ISP:** STS

PSC 347 - Comparative Left Politics

Course Units: 1.0 A critical exploration of Marxian ideas and a comparative examination of how those ideas were, and are, translated into political practice. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** REE

PSC 349 - Seminar: Comparative Politics

Course Units: 1.0 Selected topics in comparative politics. Content will vary from year to year. Preference to junior and sophomore political science majors. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, WAC **ISP:** STS

International Politics:

PSC 251 - American Foreign Policy

Course Units: 1.0 This course will provide an overview of the history of US Foreign Policy from the Cold War to the post-Cold War era. The course focuses on major policy options, issues in the Middle East, reset to Asia, and the choices between multilateralism and hegemonic dominance. The course emphasizes policy-making, especially the role of the President and Executive, in struggles with Congress, and the role of various NGO's, think tanks, and other lobbyists in the formation of foreign policy outcomes. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 252 - Global Value Chains

Course Units: 1.0 This course examines the intertwining of power, politics and markets that undergird the production and consumption of everyday consumer goods, from coffee to cars to iPhones. It examines the primary countries where these goods are produced, their differing labor regimes, the international agreements regulating them, the transnational corporations which coordinate the chain of production and consumption, how goods are globally traded and the relative winners and losers these linkages create, usually between developing and developed countries. Each product also corresponds with an underlying theoretical topic, such as natural resources and the global commons or heavy industrialization and industrial policy. The course will introduce some basic conceptual building blocks which will help us organize the extraordinary variety of places, production processes, policies and populations engaged in global value chains. But, we will spend most of the course examining one commodity or product at a time, using what we learn along the way to build an increasingly sophisticated understanding of global production and exchange. Finally, for a final project, students will conduct research on their own product of choice and explore a theoretically important concept associated with it. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** LCC, SOCS, GSPE **ISP:** REE

PSC 253 - International Relations of East Asia

Course Units: 1.0 This course surveys the main currents of international politics in East Asia since World War Two, with an emphasis on events since the end of the cold war. It considers the sequential rise of the economies of Japan, the four East Asian tigers, and finally Southeast Asia and China, and how regional integration across East Asian countries differs from other regions in the world. Furthermore, it examines the foreign policies of the main players in this area, including the important role of the United States, and it explores the evolution of international institutions and norms pertinent to East Asia. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** LCC, SOCS **ISP:** AIS

PSC 254 - Politics of the Arab-Israeli Conflict

Course Units: 1.0 In this class students will develop an understanding of the origins, development, and essence of the Arab-Israeli conflict as well as the challenges involved in resolving the conflict. The conflict will be examined in its historical, political, and human dimensions. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS

PSC 258 - Strategies of WWII

Course Units: 1.0 This course will examine the interplay between military and political strategies that shaped the course of World War II, with special attention to the European Theater. It is designed to illustrate the nature of strategic thinking, its relationship to tactical thinking, and its real-world constraints. Special attention will be given to the British decision to continue fighting after the French surrender, the Battle of Britain, Hitler's decision to invade Russia, the allied decision to invade North Africa, and the planning for Normandy. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS, WAC **ISP:** REE

PSC 350 - Theories of International Politics

Course Units: 1.0 In-depth investigation and evaluation of the major perspectives on world politics. Mainstream theories will be compared and contrasted to critical/alternative paradigms. Special attention is given to modes of theory evaluation. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** REE

PSC 351 - Global Organized Crime

Course Units: 1.0 This course will focus on the emergence of new transnational criminal networks in the age of globalization, and the sources and patterns of political corruption in a comparative perspective. Specific issues to be explored include: trafficking zones, weak states, economic underdevelopment, the western consumer demand for illegal commodities, international anti-corruption discourse, US drug policy, comparative analysis of mafia organizations, and how private money corrupts democracies. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** REE

PSC 352 - International Organizations

Course Units: 1.0 This course analyzes the development of contemporary international organizations in all forms, examines the activities of various regional organizations and non-governmental organizations (NGO's), as well as multinational organizations. Focusing on major principles, organizational characteristics, functions, and activities of the United Nations and the UN system, the course assesses the rapid changes, problems, and opportunities that have developed since the end of the Cold War. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS

PSC 353 - Terrorism and Torture

Course Units: 1.0 This course considers the definition(s) and history of terrorism, as well as its causes and manifestations in the contemporary era. Next, strategies for combating terrorism will be explored - with a major focus on the so-called "war on terror" the U.S. has been engaged in since 2001. A particularly controversial aspect of U.S. actions in the past decade has been the use of torture against detainees at Guantanamo Bay, Abu Ghraib, and other locations. The course will therefore consider a broad-ranging literature on torture - from its history, to the conditions under which it is used in the contemporary era, to questions regarding whether or not torture is effective (and for what purpose). **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS

PSC 354 - Human Rights and Immigration

Course Units: 1.0 This course explores the tense relation between immigration, nation-states, and human rights. What are the rights of documented/undocumented immigrants? What kind of human rights abuses are these people subjected to? What renders non-citizens so vulnerable to various forms of violence, discrimination, and mistreatment? To what extent can these problems be addressed and remedied by appeals to human rights? In what ways does the contemporary condition of non-citizens reveal the limits, paradoxes, and promises of human rights? In this upper level political science course, we will address these challenging, intriguing, and somewhat disconcerting questions through an interdisciplinary inquiry. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS, WAC

PSC 355 - Defense Policy

Course Units: 1.0 A deeper understanding of US Defense Policy in relation to current trends in the international threat environment. Examines the historical roots of US defense policy with a focus on the impact of isolationism, exceptionalism, and the Cold War on those policies. The policy-making process itself will be examined highlighting the influence of the realist paradigm, as well as the various organizational inputs, which help to shape the policy outcomes. A look at the post-Cold War period with emphasis on the impact of 9/11 and the proliferation of weapons of mass destruction on changes in US policy. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 358 - Wealth and Power Among Nations

Course Units: 1.0 An examination of the tensions between developed and developing countries in the global political economy. First, the course traces the genealogy of thinkers on the issues of development, such as Smith, Marx, Keynes, modernization theory and development economics, as a way to understand the enduring debates within the field.

Second, it examines historical transformations in the international economy, such as in trade, global finance and economic crises, in order to understand how the structures and opportunities for developing countries have transformed over time. Finally, although there is no focus on any single region of the world, the course touches upon the oil boom in the Middle East in the 1970s, the debt crises in Latin America and Africa in the 1980s, the rise of Japan and the East Asia tigers, the fall of the Soviet Union and Eastern bloc countries in the 1990s, the new giants of China and India, new forms of post-Fordist production, and the relationship between production and identity. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** LAS, REE

PSC 359 - Seminar: International Politics

Course Units: 1.0 Selected topics in international politics. Content will vary from year to year. Preference to sophomore and junior political science majors. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS, WAC **ISP:** REE

United States Politics:

PSC 160 - Presidential Elections

Course Units: 1.0 This course will be offered every four years, in the fall term of U.S. presidential election years. The course will consist of an in-depth examination of the presidential election. Candidates, developments, and events of that year will be analyzed, as well as placed within their broader historical and conceptual contexts. **CC:** SOCS **ISP:** AMS

PSC 176 - Mathematics and Democracy

Course Units: 1 In this course, we will assess democracy through multiple perspectives, most centrally through mathematics. In particular, we will ask ourselves essential questions such as: How can we measure and quantify democracy? How can quantitative methods enable us to analyze the concepts of fairness and bias, and also, what are their limitations? How can (and should) math play a vital role in upholding the essential democratic tenets of access, participation, and human rights? Throughout the course, we will use mathematical notation and terminology to represent real-world issues. **CC:** QMR, JDQR

PSC 260 - Policy Making and American Society

Course Units: 1.0 The process through which public policies are originated, shaped, adopted, and applied at all levels of government in the U.S. and the impact of public policies on American society. Policies such as crime, immigration, gay rights, abortion, the environment, smoking, and others are used as case studies to examine the policy process. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS

PSC 261 - Public Opinion

Course Units: 1.0 An overview of public opinion in the United States. Topics include the content of citizens' opinions toward a wide range of political topics, the sources of people's opinions, and an evaluation of whether the opinions of the public matter (for policy, for governance, and for democracy). The course material is structured around important normative questions, such as: What is the role of citizens in a democratic society? Are citizens pliable? Do citizens organize their political thinking? Do citizens demonstrate and endorse democratic basics? **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 263 - US Environmental Policy

Course Units: 1 This course examines the emergence, development, and future directions of environmental policy within the United States. It covers early environmental policy achievements such as the Clean Air Act, the reasons for federal inaction on environmental policy since the 1990s, and new directions for policy action in the 21st century as society understands. **ISP:** ENS, STS

PSC 266 - Women and Politics

Course Units: 1.0 The political, social, and economic circumstances of women in the U.S. Topics include history of women's rights, the gendering of politics, women as political actors (voters, candidates, and government officials), and politically relevant differences across gender identities. Issues include gender equality (in the workplace, education and athletics), reproductive rights, and violence against women, among others. Special attention to the intersection of gender with other identities. **Prerequisite(s):** PSC 111 or SOC 100 or sophomore standing **CC:** JSPE **ISP:** AMS, GSWS

PSC 268 - Electoral Politics

Course Units: 1.0 Examination of elections in the U.S., including presidential, congressional, and state elections. Specific topics include the democratic theory of elections, candidate strategy, voter decision making, identity politics, campaign finance, and the electoral roles of the media, political parties, and campaign consultants. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 269 - Media and Politics

Course Units: 1.0 Major trends in U.S. media, politics, and political communication. The focus is on media coverage of politics as well as effects of media on the public, across various types of media sources. These will include the traditional news media, partisan media sources, and social media. The larger context is the role of media in a democratic society. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, WAC **ISP:** AMS

PSC 270 - CIA and the Art of Intelligence

Course Units: 1.0 Provides an historical background to intelligence and espionage, and offers perspectives on present day secret intelligence operations of world powers in support of their national security objectives. Discussions on intelligence analysis, evaluation, human and technical intelligence, cryptography, counter-intelligence, moles, various kinds of overt operations, US foreign policy issues and goals. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, REE

PSC 272 - The Environment, Energy, and US Politics

Course Units: 1.0 Examination of how politics and policymaking affect the air we breathe, the water we drink, and the land we live on. This course will explore key U.S. environmental issues and their scientific underpinnings as well as the connections between these issues and our collective use of natural resources. The course will review major pieces of federal environmental law in the United States and address the policy considerations, justifications, and regulatory frameworks underlying them, as well as the effectiveness of these laws in achieving a healthier environment. The course will also examine the respective roles of Congress, the executive agencies, and the courts in determining environmental policy. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, STS

PSC 273 - The Supreme Court and Judicial Politics

Course Units: 1.0 An investigation of the judicial branch of government in the U.S. that focuses on the role of judges, the functioning of courts, and leading contemporary controversies in the judicial system. Among the primary concerns of this course are: the structure of the American Judiciary, judicial selection processes, how cases originate and move

through the judicial system, how judges think about and reach decisions in the cases, and the role law plays in society. In exploring these topics many actual Supreme Court cases are dissected, focusing on such issues as: gay rights, pornography, rights of disabled citizens, the rights of those accused of crimes, and free speech over the Internet, to name only a few areas. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, LAW

PSC 277 - Capital Region Political Internships

Course Units: 1.0 This class enables students to become politically active and/or gain political experience by working for elected officials, government agencies, election campaigns, interest groups, non-profit organizations, lobby firms, etc. Students draw on their internship experience and related academic work to reach a better understanding of the complexities and dynamics of politics at the state or local level. Students are permitted to enroll in this course twice, although the course will count toward the Political Science major only once. **Prerequisite(s):** Sophomore standing and permission of the instructor. **CC:** SOCS **ISP:** AMS, ENS **Note:** This course does not count towards the PSC portion of an ID major.

PSC 280T - Washington, D.C. Internship Program

Course Units: 1.0 A 10-week spring term in Washington, D.C. wherein each student is an intern either on the Hill, with a Nongovernmental agency (NGO), or with some other political, social, cultural, or scientific organization in D.C.. The internship receives one course credit. The second course is a seminar focused on a specific political theme (examples from past years include national security and foreign policy) introducing students to the policy, partisan and ideological debates within Washington. The third course is Washington, D.C.: Cultural and Political Spaces in America's Capital (AMS 251T). **Prerequisite(s):** Sophomore standing and permission of the instructor. These courses may not be taken as pass/fail. **ISP:** AMS **Note:** The internship does not count towards the PSC portion of an ID major.

PSC 282 - Health Politics and Policy

Course Units: 1.0 This course will examine the subject of health care policy in the American political system. Students will learn about the roles and functions of key actors, institutions, concepts, and principles as part of a broad overview of American health politics. From this foundation, we will develop a theoretical and practical framework to ground our analysis of current health policy issues and debates. Topics will include finance, insurance, Medicare/Medicaid, the Patient Protection and Affordable Care Act (aka "Obamacare"), prescription drug regulation, private markets, the public interest, ethics, and the role of government. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, WAC **ISP:** AMS, STS

PSC 283 - Social Movements, the Environment and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** SOC 270 **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **ISP:** AMS, ENS, STS

PSC 284 - Political Sociology

Course Units: 1.0 Issues of political power, domination, and legitimacy from a sociological perspective. Topics include the creation and maintenance of political power, the role of legitimacy and the impact of political socialization. **Cross-Listed:** SOC 240 **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AFR, AMS, GSWS

PSC 286 - The Modern Presidency

Course Units: 1.0 Case studies in Presidential leadership and administrative styles, including those of FDR, Eisenhower, Kennedy, Johnson, Reagan, Clinton, Obama, and Trump. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 287 - The Contemporary Presidency

Course Units: 1.0 The rapidly-changing Trump-era presidency in contemporary and historical context: recent developments in the institutional and narrative-based presidency, with a background examination of the administrations from Reagan through Trump. **CC:** SOCS **ISP:** AMS

PSC 289T - New Hampshire Primary Mini-Term

Course Units: 1.0 One of the most important events in every presidential election cycle is the New Hampshire primary. In this mini-term, students will analyze the New Hampshire primary through formal coursework (readings, discussions, papers, etc.). They will also experience the primary by spending three weeks in New Hampshire in late November-early December, shortly before balloting occurs early in the following year (a presidential election year). While in New Hampshire, students will volunteer with a candidate campaign organization, media outlet, or other campaign-related group. In addition, students will attend campaign events and guest lectures (by state officials, campaign staff members, journalists, scholars, etc.). This course is offered every four years consistent with the presidential election cycle. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **ISP:** AMS

PSC 361 - Political Psychology

Course Units: 1.0 The application of psychological theories to understanding the political attitudes and behavior of individuals (citizens, political leaders) as well as groups. Specific topics include stereotypes, personality, social cognition, attitude formation, social identity theory altruism, emotion, and elite decision-making. **Prerequisite(s):** PSC 111 or PSC 112 or PSY 100 **CC:** SOCS, WAC

PSC 364 - Law and Film

Course Units: 1.0 This course uses the medium of film as a springboard to introduce and explore concepts in legal theory, American legal culture, and the exercise of public and private power through the legal system. Specific topics of discussion include law as morality, higher versus positive law, law and gender, and the heroic lawyer mythology. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, WAC **ISP:** AMS, FLM, LAW

PSC 365 - Law, Society, and the Wire

Course Units: 1.0 HBO's The Wire is often hailed as one of the greatest television series. During its run, critics compared it to a novel or epic poem. Along with its gritty portrayal of inner city decay and the lives lived in this environment, the crime drama convincingly portrays communities and their institutions. The Wire's depiction of law is among its most nuanced and provocative features. The show easily slips among the black letter law, the law on the street, and informal law-like systems that exist among communities that do not fully subscribe to the norms of the state. This course will use the portrayal of law in The Wire to address some of the following questions: What is law? Is law only the domain of the state? What is the relationship between law and power? Is violence inherent in law? Is law inherently oppressive? If so, how do we reconcile oppression with democratic practice and human rights? **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 369 - Seminar: US Politics

Course Units: 1.0 Selected topics in U.S. politics. Content will vary from year to year. Preference to sophomore and junior political science majors. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 370 - Constitutional Law

Course Units: 1.0 An examination of the Constitutional tradition in the United States, focusing upon the structure and powers of the federal government. Topics and themes include the power of the courts to interpret the laws and the Constitution, the power of the federal government and the significance of "states' rights," federal government intervention in matters of "commerce" or economics, and the nature and expansion of executive power, especially in the area of national security. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **CC:** SOCS **ISP:** AMS, LAW

PSC 371 - Civil Rights and Civil Liberties

Course Units: 1.0 Considers the protections afforded to individual rights and liberties by the U.S. Constitution and the Bill of Rights. Topics include freedom of speech and assembly, the right to privacy, religious freedom, equal protection and discrimination, and the due process rights of those accused of crimes. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, JCHF, JSPE **ISP:** AMS, LAW

- **Note:** If you are at all unclear regarding which sub-field a course counts towards, please contact the Chair

Political Science, B.A.

Requirements for the Major:

Twelve courses in the department.

PSC 111 - Introduction to US Politics

Course Units: 1.0 A broad overview of the operation and issues of central concern in the study of U.S. politics. Particular attention is paid to evaluating the U.S. governing system in relation to major theories of political power, such as elitism, pluralism, and populism. In examining these and other broad concepts there is a focus on the foundations, institutions, and linkage mechanisms (political parties, media, etc.) that play a critical role in U.S. politics. Depending on the instructor, topics covered often include: the founding period, U.S. political culture, civil rights and liberties, money and politics, campaigns and elections, the role of mass media, parties and interest groups, politics in the post 9/11 era, and public policies focusing on crime, foreign affairs, the environment, poverty, health care, and war. **CC:** SOCS, JSPE **ISP:** AMS

or

PSC 112 - Introduction to Global Politics

Course Units: 1.0 An overview of 21st century dynamics that shape national politics in different regional settings, the behavior of states in the world arena, and how global actors impact each other. Depending on the instructor, topics to be explored could include war, terrorism, political economy, historical perspectives, cultural tensions, nation-building and development, imperialism, democracy, balance of power, human rights, emerging institutions, and the world's ecology. In all sections, attention will be paid to the development of political arguments, the critical use of concepts and theories, and strategies of making judgments about globalization and about the impact of international affairs on domestic politics and vice-versa. **CC:** SOCS, GCHF, GSPE **ISP:** REE

and

PSC 113 - Introduction to Political Thought

Course Units: 1.0 This course examines key ideas and concepts, as well as "eternal" questions, in the history of western political thought. We will ask controversial questions such as: What is justice? Can we achieve democracy without eliminating poverty? What are the qualities of a good leader? Should we even have leaders? Can women be philosopher-kings? How does class struggle affect the participation of citizens? What are the qualities of a "good" citizen? These questions have been debated for over 2500 years. The debate continues in this course as we learn what the major thinkers said about these issues. **CC:** SOCS **ISP:** LAW

PSC 498 - Political Science Senior Thesis 1

Course Units: 0.0 Open to seniors in political science. Subject to department approval, this requirement may be fulfilled by the completion of original political science research, political action, political art, or applied public policy research. The senior project is an intensive two-term research project serving as the capstone experience for the major. All senior projects are subject to an oral examination as a requirement for graduation as a major.

PSC 499 - Political Science Senior Thesis 2

Course Units: 2.0 **(TBD: Staff) CC:** WS

Of the twelve, no more than two may be internship courses (i.e. PSC 277, PSC 280T).

Eight non-specified courses:

Note: at least three of the four major areas of the discipline must be covered

Political Theory:

PSC 230 - Ancient Political Thought

Course Units: 1.0 Examines the ideas of major political thinkers in ancient philosophy. Potential themes include the tension between philosophy and politics, the nature of democracy, the relationship between war and political life, debates concerning how to live a "good life," the political significance of poetry and art, and the body/mind duality. Thinkers and texts that may be covered include Homer, Thucydides, Plato, Aristotle, the Greek poets, Saint Augustine, Thomas Aquinas, and the Bible. **CC:** SOCS

PSC 231 - Theories of Peace and War

Course Units: 1.0 Do aggression and violence arise from individuals or groups, from nations, global forces, or from entire civilizations? Is warfare an eliminable pathology or just part of the human condition? Any answer to these questions ultimately involves ontological claims on how things are, key in shaping the ways in which we imagine and inhabit our world. This course revisits arguments on peace, war, and violence central in the tradition of Western political thought. By exploring works of classical, modern, and contemporary political thinkers, contextualized in reference to key cases, we will identify and critically assess contentious explanations and philosophical justifications.

PSC 232 - Violence and Politics

Course Units: 1.0 What is the relationship between violence and politics? Is politics a continuation of violent struggle through other means? Or is there a fundamental difference between the two? What is the relationship between legal order and violence? What is the role of violence in resisting different forms oppression? Can the use of violence ever be

morally justifiable? If so, when and why? This political theory course aims to inquire into these challenging questions by studying the theoretical debates on the relationship between violence and politics with a special emphasis on questions related to the relationship between legal order, constitution of the state, and the use of violence both in support of, and in opposition to, the existing order. During the course of the term, we will focus on debates surrounding difference forms of violence in embedded in our legal systems, look at examples of resistance movements, assess different arguments made in defense of nonviolent and violent methods of resistance, analyze different conceptions of civil disobedience, and grapple with the question of how representations of violence affect our judgments about its legitimacy and/or justification. **CC:** SOCS **ISP:** LAW

PSC 234 - Women Political Theorists

Course Units: 1.0 Where are all the women in the history of political thought? Some thinkers we explore throughout history include Mary Astell, Mary Wollstonecraft, Harriet Taylor Mill, and Emma Goldman. Their work will prepare us to discuss the political and social thought of three prominent women thinkers of the 20th century: Simone de Beauvoir, Iris Murdoch, and Hannah Arendt. We investigate questions concerning freedom and contingency, responsibility, the nature of self in relation to others, and the limits and scope of ethical action in the work of these theorists. Women political theorists often write novels, short stories, and autobiography/biography (rather than philosophical texts) to explore political and philosophical themes. Consequently, we will be reading novels and autobiography along with political philosophy to think about the relationship between philosophy, politics, and literature. We will also be interested in considering how living their lives as women might have influenced the way these philosophers viewed major political and intellectual issues of the day. **CC:** SOCS **ISP:** GSWS

PSC 235 - African American Political Thought

Course Units: 1.0 This course will introduce students to the critical and constructive dimensions of African American political thought. We will assess the claims that Black Americans have made on the polity, how they define themselves, and how they have sought to redefine the basic terms of American public life. **CC:** SOCS, WAC **ISP:** AFR, AMS, GSWS

PSC 236 - Police, Security and Biopower

Course Units: 1.0 While the development of a political community presupposes a certain level of security, the second half of the 20th century shows how unfortunately frequent it has become for people to turn into victims of the devices they set to secure themselves. How can the tensions between the political and security be addressed to enhance, not to destroy, the freedom and creativity that characterize a political community? Organized as a seminar, and heavy in contemporary political theory, this course will explore both practical and theoretical relations between political communities and the pre-political preconditions for their preservation. **CC:** LCC, SOCS **ISP:** LAS

PSC 237 - Music and Politics

Course Units: 1.0 This class explores the multiple relationships between music and politics with a specific focus on the following dimensions: (1) the use of music as a lens to perceive the world, to frame injustices, to inform political discourse, to raise consciousness, and to mobilize public opinion; (2) the political context in which critically significant music is produced; (3) biographical details of artists that bring understanding to the art they produce; (4) the impact of class, race, ethnicity, and gender on music; (5) the interpretation of political messages found in music; and (6) the intentional and unintentional political consequences of popular music. **CC:** SOCS **ISP:** AMS, LAS

PSC 239 - American Political Thought Through the Progressive Era

Course Units: 1.0 Political thought in America from the colonial period until World War I with an emphasis on evolving political, social, cultural, and intellectual perspectives on enlightenment values, nationalism, slavery, the rise of the industrial economy, the political machine, and America's changing role in the world. **CC:** SOCS **ISP:** AMS

PSC 330 - Enlightenment and Its Discontents

Course Units: 1.0 Is there a politics to the "age of reason?" This course focuses on enlightenment thought and its critics, in the modern as well as the contemporary era. We will inquire about the role of reason in setting the terms of citizenship, including how the citizen should behave. Is reason a male attribute? Does passion and/or religion play a role in reasonable thinking? The historical span of this course will generally cover the 17th to the 19th centuries and show how we have come to think about politics the way we do today. **CC:** SOCS

PSC 333 - Twenty-First Century American Political Thought

Course Units: 1.0 An exploration of political thinking in regard to the multiple crises the United States faces in the 21st century. Potential topics include threats to democracy in the United States by right wing groups and White Supremacy; specific challenges of structural racism, gender inequity, police violence, guns; social movements such as Black Lives Matter, #metoo, the Sunrise Movement; and the historical meanings of individualism, diversity, freedom, imperialism, and Western expansion in the US. **CC:** SOCS **ISP:** AFR, AMS, GSW

PSC 334 - Contemporary Continental Theory

Course Units: 1.0 In the latter half of the twentieth century, theorists working in the continental tradition have developed new approaches to modern political concerns about the power of the state, the possibility of democracy, the importance of language, media and rhetoric, and the connections between knowledge, ethics, religion and politics. Students in this course will grapple with some of the most important figures and theories at the leading edge of this tradition. While this course presumes no background in continental theory, students must be prepared to wrestle with difficult texts, ideas and thinkers. Authors may include: Agamben, Badiou, Butler, Cavarero, Cavell, Deleuze, Derrida, Fanon, Foucault, Ranciere, Zizek. **CC:** SOCS, WAC, WAC-R **ISP:** REE

PSC 336 - Political Wisdom

Course Units: 1 Political life involves making decisions that may define the fate of entire communities. How do we best prepare to judge, decide, and act wisely? In the Crito, Socrates offers a defense of the laws in arguing against escaping his death sentence. Yet, segregation, slavery, Apartheid, the Holocaust, were all carried out through legal means. This class assesses the possibilities of phronēsis, or prudence, which Aristotle describes as the virtue of producing "right judgments about what is to be done" in concrete, unique, and unrepeatable circumstances to tackle wicked problems. **CC:** GCHF, GSPE, WAC

PSC 339 - Seminar: Political Theory

Course Units: 1.0 Selected topics in political theory. Content will vary from year to year. Preference to sophomore and junior political science majors. **CC:** SOCS, WAC **ISP:** AFR, GSWS

PSC 388 - Politics of Protest

Course Units: 1 Are political protests dangerous or central to democratic politics? Can spontaneous protests ever create long lasting change? Or are they bound to dissipate? What are the acts of protest that are justifiable? Under what conditions? To address these questions, the course will cover a wide range of readings from foundational texts written by Martin Luther King, Mohandas Gandhi, Henri David Thoreau, John Rawls, Hannah Arendt, and Jürgen Habermas

to contemporary theorists' interventions into conceptual debates regarding different forms of protest and their democratic value.

PSC 388R - Politics of Protest

Course Units: 1 Are political protests dangerous or central to democratic politics? Can spontaneous protests ever create long lasting change? Or are they bound to dissipate? What are the acts of protest that are justifiable? Under what conditions? To address these questions, the course will cover a wide range of readings from foundational texts written by Martin Luther King, Mohandas Gandhi, Henri David Thoreau, John Rawls, Hannah Arendt, and Jürgen Habermas to contemporary theorists' interventions into conceptual debates regarding different forms of protest and their democratic value.

PSC 434 - Feminist Film

Course Units: 1.0 Using 10 films as our "texts" we will examine the role of women in society, the diversity of women's lives, the impact of gender roles in various cultural contexts, the possibility of alternative sexualities and ways of living, and whether we can say what constitutes a "feminist film." The course is focused on discussion of, and writing about, the films but includes analysis of feminist political theory and feminist film theory to provide tools for better interpretation. **CC:** SOCS **ISP:** AMS, FLM, GSWS

Comparative Politics:

PSC 201T - Cambodia Study Abroad: Crossing Cultures

Course Units: 1.0 This class is geared towards deepening students' understanding of Cambodian history, culture and contemporary society. During Winter term (prior to the beginning of class in Spring term), there are two weeks of instruction designed to give students academic background on political and economic development, and a brief primer on 20th century and contemporary Cambodian history, politics, economy, and society. However, the core of the class is the experience in-country during spring term. This will consist of classroom study, lectures by in-country experts, excursions to learn and interact with the broader society, and will help students to excel in their internships with local NGOs. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing.

PSC 213 - Contemporary China: Politics, Economy and Society

Course Units: 1.0 A survey course on the politics of the People's Republic of China, with an emphasis on state-society relations. After briefly introducing the Republican and state socialist eras, the heart of the course provides a historical and topical overview of the contemporary political and economic reforms in China. It explores topics in Chinese domestic politics, such as policy-making, center-local relations, inequality, rural transformation, industrialization, village elections, the rule of law and contentious politics, in addition to China's relationship with the outside world, including its integration into the international economy, the environment, energy and foreign policy. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AIS

PSC 216 - Politics in Africa

Course Units: 1.0 This course is designed to introduce students to the essential political history and political dynamics of contemporary Sub-Saharan Africa. By the end of the term, students will have developed an understanding of the process through which the states of contemporary Sub-Saharan Africa emerged; the types of political systems that have evolved in these states; ethnicity and ethnic conflict in Africa; inter and intra-state wars on the continent and their impact; the challenges of economic development and securing prosperity for Africa; and gender and politics, religion and politics, and the politics of terrorism in Africa. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **ISP:** AFR

PSC 240 - Comparative Ethnic and Racial Politics

Course Units: 1.0 An introduction to the trends and patterns of ethnic conflicts in the contemporary world. Issues pertaining to the rise of nations; theories of ethnic mobilization; the attempt to build general, cross-national explanations; and current efforts to solve ethnic conflict. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS **ISP:** AMS, REE

PSC 242 - Comparative Climate Change Politics

Course Units: 1 This year we have seen historic temperature records and heatwaves across the globe, the impacts of wildfires around the country and locally, and periods of drought and extreme storms in different areas. These have been attributed to or amplified by anthropogenic climate change, which is one of the biggest challenges facing society in the 21st century. This course examines why climate change is such a "wicked problem," and why it is so difficult to address effectively. The barriers to addressing climate change are not just technical and scientific, but also political and social. Thinking about a future where we as a society mitigate the worst impacts of climate change this century, and adapt to other impacts entails navigating different political systems around the world and balancing various geopolitical and economic interests. Through this course, we will examine how these factors shape or constrain efforts to address climate change in Western Europe, the United States, China, India, and other parts of the world. We will also examine how climate change is impacting human life and security in these countries and other parts of the world, and how it may amplify existing inequalities and other crises. **ISP:** ENS, STS

PSC 243 - Latin American Politics

Course Units: 1.0 This course offers a working knowledge of Latin America's current politics, trends, and challenges. Years after democratization, regular elections are in place, and support for democracy in the region seems widespread. Still, as local traditions infuse the principles of liberal democracy, politics in Latin America reveal unique traits. Exploring the political as an interpretive endeavor, the course's readings, assignments, and class discussions will help to identify key political institutions, traditions, and cleavages, as well as forms of agency and leadership, both in specific countries and at the regional level. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** LAS

PSC 244 - The Politics of Extraction in the Americas

Course Units: 1.0 As the shrinking of the Amazon keeps making headlines, extractive activities including large-scale mining, logging, and agriculture are rapidly transforming the landscape of the Americas. This class surveys main extractive activities across the hemisphere, their output and political impact. While feeding expanding markets, extractivism has been linked to land grabs, forced displacement, conflicts, state and paramilitary violence, lobbying, corruption, and coups d'état. In exploring trends and cases, we will review concepts, theories, and alternatives to extractivism, including women and indigenous-led traditions of protecting different forms of life and Earth itself. By taking this course, students will develop informed perspectives regarding which extractive activities may be essential, and whether (and how) they can be done sustainably, as part of the quest to secure a livable future. **Prerequisite(s):** PSC 111 or PSC 112 **CC:** SOCS, GSPE **ISP:** LAS

PSC 245 - Populisms in Latin America & Beyond

Course Units: 1.0 Leadership and politics in Latin America are often characterized as populist, but there is widespread disagreement as to what populism is. Claimed by no one, most of the time populism is blamed, disapprovingly, upon leaders and movements connoting demagoguery, manipulative appeals to people's emotions and disregard for formal institutions and rules. Interestingly, a similar characterization of populism has recently entered politics in countries such as France or the U.S. With a main focus on Latin America, extending the discussion outside the region, this course scrutinizes three different "populist moments," from the first half of the 20th century to the present. Major

figures such as Peron or Vargas; neoliberal reformers from the 1990s, from Fujimori to Menem, and recent Latin American leaders, from Chávez, to Fernandez de Kirchner, plus a few salient cases from outside the region (e.g. Trump, Le Pen) will be examined in the class. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** LAS

PSC 246 - Asian Development: Industrialization Beyond the West

Course Units: 1.0 How did some Asian countries become the first non-Western countries to achieve high-income status, near elimination of poverty, a highly educated and healthy population, leading edge technology and in some cases robust democracies and even admirably equal distributions of wealth? And how did they come to compete with the West, often on terms set by Western countries, despite the West's much earlier industrialization, and the vast geographic and cultural distances? Are answers to be found in politics and institutions? Culture? Resources and demography? Historical effects of imperialism? Regionalism? After a brief comparison of pre-modern China and Europe, the course focuses on the 'miracle' of Japanese industrialization from the late 19th to early 20th century, as well as Japan's combination of industrialization and militarization on the road to World War Two. This is followed by post-World War Two Japan and the four Asian Tigers (South Korea, Taiwan, Hong Kong and Singapore), before focusing on the return of China since the 1980s, and Southeast Asia within the Asian region. This is a reading intensive course, though no background in Asia, political science or economics is required **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AIS, AMS

PSC 247 - Human (In) Security in a Comparative Perspective

Course Units: 1.0 With a focus on "the daily lives of ordinary people", the recent tradition of Human Security redefines safety as "freedom from fear and freedom from want." At the interface of security, development, and Human Rights grounding democratization, Human Security adopts the perspective of the common citizen, calling for collaboration between states and international and grassroots organizations to prevent and eliminate obstacles undermining people's autonomy, rights, and development. This course aims, first, to provide students with a solid conceptual and applied knowledge of Human Security. Second, by learning about the deep-seated conditions that hinder people's safety from fear and from want, students will gain a thicker perspective on the structural challenges for peace and democracy around the world through the eyes of the people on the ground. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, GSPE **ISP:** GSW, LAS

PSC 248 - The Politics of the New Europe

Course Units: 1.0 A survey of contemporary European politics including topics such as the emerging European Union, the rise of right-wing movements, growing regional and sectional conflict, patterns of immigration, and debate about the very meaning of "Europe." **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** REE

PSC 249 - Middle East Politics

Course Units: 1.0 This course is designed to introduce students to the essential political history and dynamics of the Middle East in the 20th century. Students will study the processes through which the states of the contemporary Middle East emerged; the types of political regimes that have evolved in these states; the origins and evolution of the Arab-Israeli conflict; the relationships between Islam and politics; and debates regarding U.S. foreign policy toward the region. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS

PSC 340 - Politics and Film

Course Units: 1.0 This course explores political themes through the rigorous viewing of feature films and documentaries from the United States and abroad. Films present differing perspectives on the subject. Themes include war, revolution, counter-revolution, role of the individual in social conflict, and US intervention in foreign lands. Class

requires critical analysis of the films, supplementary readings, and six conceptual-analytical papers. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, FLM

PSC 341 - Genocide

Course Units: 1.0 Genocide is humanity's greatest and most enduring scourge. After the horrific Holocaust, the world's leaders cried out, "Never Again." Sadly, genocide has occurred, again and again, wherein mass murders, ethnic cleansing, mass rape and pillaging, has taken place in countless places and times since World War II. This course examines examples, causes and motives, position of the perpetrators, victims and bystanders. We shall also look at proposals for avoiding or preventing genocide, perhaps through some form of international humanitarian intervention, or "responsibility to protect." **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS

PSC 342R - Challenges to Democratization in Latin America

Course Units: 1.0 **(Not Offered this Academic Year)** Democracies in Latin America confront a number of challenges, obstacles, and dilemmas that frequently put their continuity at risk. This course explores five thematic clusters. Social indicators on rights and inequality, political identities and citizenship, political and legal institutions, life and economic growth, and public safety, crime, and state violence. A preoccupation with some of the most urgent challenges faced by democracy in the region will also lead us to assess actual and potential alternatives. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS **ISP:** LAS

PSC 343 - Women and Politics in the Muslim World

Course Units: 1.0 In this course we will study how politics and women intersect across the Muslim world, including the Middle East, Sub-Saharan Africa, Central Asia, and South Asia. Empirically, we will investigate the varied paths women's rights have taken in different national settings while examining similarities and differences in the degree to which women wield social, economic, and political power in their respective countries. We will seek theoretical explanation for women's status in the region, which varies significantly from country to country. Sample topics for discussion include the Koran and women, debates about the veil, honor killings, the impacts of oil, war, and foreign intervention on women's status, and Muslim female prime ministers and presidents. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** GSWS, REL

PSC 346 - Technologies in Society: Power, Politics and Economy across Industrial Revolutions

Course Units: 1.0 With the advent of the internet, robotics, Big Data, artificial intelligence and machine learning, we are already well into a Third (some say 'Fourth') Industrial Revolution. If history is any guide, this industrial revolution is transforming society, politics and culture in ways both overt and subtle. Further, as it diffuses, it will not be replicated identically across time and space. This course compares the first, second and third industrial revolutions - selectively focusing on the advent of factories/machines, mass production and information technologies, respectively. For each revolution, the course asks three questions 1) how value is created, 2) who controls and benefits from the new modes of production and consumption, and 3) how it transforms and is transformed by its social and political contexts. Second, it explores variation across different national political economies, most prominently in the advanced countries of England, the US, Europe and Japan, with selective comparisons to other developing countries, including China today. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, GCHF, GSPE **ISP:** STS

PSC 347 - Comparative Left Politics

Course Units: 1.0 A critical exploration of Marxian ideas and a comparative examination of how those ideas were, and are, translated into political practice. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** REE

PSC 349 - Seminar: Comparative Politics

Course Units: 1.0 Selected topics in comparative politics. Content will vary from year to year. Preference to junior and sophomore political science majors. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, WAC **ISP:** STS

International Politics:

PSC 251 - American Foreign Policy

Course Units: 1.0 This course will provide an overview of the history of US Foreign Policy from the Cold War to the post-Cold War era. The course focuses on major policy options, issues in the Middle East, reset to Asia, and the choices between multilateralism and hegemonic dominance. The course emphasizes policy-making, especially the role of the President and Executive, in struggles with Congress, and the role of various NGO's, think tanks, and other lobbyists in the formation of foreign policy outcomes. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 252 - Global Value Chains

Course Units: 1.0 This course examines the intertwining of power, politics and markets that undergird the production and consumption of everyday consumer goods, from coffee to cars to iPhones. It examines the primary countries where these goods are produced, their differing labor regimes, the international agreements regulating them, the transnational corporations which coordinate the chain of production and consumption, how goods are globally traded and the relative winners and losers these linkages create, usually between developing and developed countries. Each product also corresponds with an underlying theoretical topic, such as natural resources and the global commons or heavy industrialization and industrial policy. The course will introduce some basic conceptual building blocks which will help us organize the extraordinary variety of places, production processes, policies and populations engaged in global value chains. But, we will spend most of the course examining one commodity or product at a time, using what we learn along the way to build an increasingly sophisticated understanding of global production and exchange. Finally, for a final project, students will conduct research on their own product of choice and explore a theoretically important concept associated with it. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** LCC, SOCS, GSPE **ISP:** REE

PSC 253 - International Relations of East Asia

Course Units: 1.0 This course surveys the main currents of international politics in East Asia since World War Two, with an emphasis on events since the end of the cold war. It considers the sequential rise of the economies of Japan, the four East Asian tigers, and finally Southeast Asia and China, and how regional integration across East Asian countries differs from other regions in the world. Furthermore, it examines the foreign policies of the main players in this area, including the important role of the United States, and it explores the evolution of international institutions and norms pertinent to East Asia. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** LCC, SOCS **ISP:** AIS

PSC 255 - Human Rights, International Law, and Humanitarianism

Course Units: The course critically engagesS with the human rights issues that plague liberal democracies. Given how central human rights are to the identity of the global north, it is particularly disconcerting to observe increasing number of human rights abuses in countries such as the United States, UK, Australia, and the members of EU.? What can account for this unsettling fact? Can the unprecedented developments
in human rights law and international rights regime be sustained in the face of serious charges of double standards? What is the role and effectiveness of institutions such as ICC and ICJ?

PSC 254 - Politics of the Arab-Israeli Conflict

Course Units: 1.0 In this class students will develop an understanding of the origins, development, and essence of the Arab-Israeli conflict as well as the challenges involved in resolving the conflict. The conflict will be examined in its historical, political, and human dimensions. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS

PSC 257 - International Political Economy

Course Units: 1 This course introduces students to the study of international political economy (IPE). It addresses the reciprocal, interactive relationship between politics and economics in the international system. Increasingly integrated global markets present growing challenges and opportunities for political actors around the world. We will explore the effects of political factors on international economic relations as well as the impact of economic factors on domestic and international politics across a variety of issue areas in IPE. **CC:** SOCS, GCHF, GSPE

PSC 258 - Strategies of WWII

Course Units: 1.0 This course will examine the interplay between military and political strategies that shaped the course of World War II, with special attention to the European Theater. It is designed to illustrate the nature of strategic thinking, its relationship to tactical thinking, and its real-world constraints. Special attention will be given to the British decision to continue fighting after the French surrender, the Battle of Britain, Hitler's decision to invade Russia, the allied decision to invade North Africa, and the planning for Normandy. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS, WAC **ISP:** REE

PSC 350 - Theories of International Politics

Course Units: 1.0 In-depth investigation and evaluation of the major perspectives on world politics. Mainstream theories will be compared and contrasted to critical/alternative paradigms. Special attention is given to modes of theory evaluation. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** REE

PSC 351 - Global Organized Crime

Course Units: 1.0 This course will focus on the emergence of new transnational criminal networks in the age of globalization, and the sources and patterns of political corruption in a comparative perspective. Specific issues to be explored include: trafficking zones, weak states, economic underdevelopment, the western consumer demand for illegal commodities, international anti-corruption discourse, US drug policy, comparative analysis of mafia organizations, and how private money corrupts democracies. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** REE

PSC 352 - International Organizations

Course Units: 1.0 This course analyzes the development of contemporary international organizations in all forms, examines the activities of various regional organizations and non-governmental organizations (NGO's), as well as multinational organizations. Focusing on major principles, organizational characteristics, functions, and activities of the United Nations and the UN system, the course assesses the rapid changes, problems, and opportunities that have developed since the end of the Cold War. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS

PSC 353 - Terrorism and Torture

Course Units: 1.0 This course considers the definition(s) and history of terrorism, as well as its causes and manifestations in the contemporary era. Next, strategies for combating terrorism will be explored - with a major focus on the so-called "war on terror" the U.S. has been engaged in since 2001. A particularly controversial aspect of U.S. actions in the past decade has been the use of torture against detainees at Guantanamo Bay, Abu Ghraib, and other locations. The course will therefore consider a broad-ranging literature on torture - from its history, to the conditions under which it is used in the contemporary era, to questions regarding whether or not torture is effective (and for what purpose). **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS

PSC 354 - Human Rights and Immigration

Course Units: 1.0 This course explores the tense relation between immigration, nation-states, and human rights. What are the rights of documented/undocumented immigrants? What kind of human rights abuses are these people subjected to? What renders non-citizens so vulnerable to various forms of violence, discrimination, and mistreatment? To what extent can these problems be addressed and remedied by appeals to human rights? In what ways does the contemporary condition of non-citizens reveal the limits, paradoxes, and promises of human rights? In this upper level political science course, we will address these challenging, intriguing, and somewhat disconcerting questions through an interdisciplinary inquiry. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS, WAC

PSC 355 - Defense Policy

Course Units: 1.0 A deeper understanding of US Defense Policy in relation to current trends in the international threat environment. Examines the historical roots of US defense policy with a focus on the impact of isolationism, exceptionalism, and the Cold War on those policies. The policy-making process itself will be examined highlighting the influence of the realist paradigm, as well as the various organizational inputs, which help to shape the policy outcomes. A look at the post-Cold War period with emphasis on the impact of 9/11 and the proliferation of weapons of mass destruction on changes in US policy. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 357 - Global Environmental Politics

Course Units: 1 This is a course on global environmental governance. Environmental regulation has expanded from a domestic phenomenon to one that has both global participants and global impacts. Much effort has been invested in formulating international environmental policies. However, these efforts have been rife with complications and disagreements, as many environmental indicators show worsening ecological conditions at unprecedented levels. The scientific uncertainty that shrouds many environmental questions is compounded by the fact that environmental issues often lie at the conjunction of contentious political concerns such as economic development, international trade, ecological justice, and global influence. This course provides an overview of the key concepts, actors, concerns, and issues related to global environmental policy and negotiations. The goal is to understand the larger picture of intertwining relationships between natural, political, economic, and social systems that shape environmental policy. **ISP:** ENS

PSC 358 - Wealth and Power Among Nations

Course Units: 1.0 An examination of the tensions between developed and developing countries in the global political economy. First, the course traces the genealogy of thinkers on the issues of development, such as Smith, Marx, Keynes, modernization theory and development economics, as a way to understand the enduring debates within the field. Second, it examines historical transformations in the international economy, such as in trade, global finance and economic crises, in order to understand how the structures and opportunities for developing countries have transformed over time. Finally, although there is no focus on any single region of the world, the course touches upon the oil boom in the Middle East in the 1970s, the debt crises in Latin America and Africa in the 1980s, the rise of Japan and the East Asia tigers, the fall of the Soviet Union and Eastern bloc countries in the 1990s, the new giants of China and India, new

forms of post-Fordist production, and the relationship between production and identity. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** LAS, REE

PSC 359 - Seminar: International Politics

Course Units: 1.0 Selected topics in international politics. Content will vary from year to year. Preference to sophomore and junior political science majors. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS, WAC **ISP:** REE

PSC 397 - North-South Relations

Course Units: 1 This course examines the fundamental issues that arise out of the relations between the industrialized countries of the global "North" (e.g., the U.S., Europe, Japan) and the developing countries of the global "South," with an emphasis on the period from the mid-twentieth century to today. Our main focus is on the development of the South, and the ways in which its relationship with the North has affected its development trajectories and outcomes. **Prerequisite(s):** PSC 111 , PSC 112 or Sophomore standing **CC:** SOCS, GCHF, GSPE

United States Politics:

PSC 123 - Topics in Mathematical Political Science

Course Units: 1.0 A mathematical treatment (not involving calculus or statistics) of escalation, political power, social choice, and international conflict. **Cross-Listed:** MTH 060 **Prerequisite(s):** No previous study of political science is necessary, but PSC 111 or PSC 112 would be relevant. **CC:** QMR, SOCS **ISP:** STS

PSC 160 - Presidential Elections

Course Units: 1.0 This course will be offered every four years, in the fall term of U.S. presidential election years. The course will consist of an in-depth examination of the presidential election. Candidates, developments, and events of that year will be analyzed, as well as placed within their broader historical and conceptual contexts. **CC:** SOCS **ISP:** AMS

PSC 176 - Mathematics and Democracy

Course Units: 1 In this course, we will assess democracy through multiple perspectives, most centrally through mathematics. In particular, we will ask ourselves essential questions such as: How can we measure and quantify democracy? How can quantitative methods enable us to analyze the concepts of fairness and bias, and also, what are their limitations? How can (and should) math play a vital role in upholding the essential democratic tenets of access, participation, and human rights? Throughout the course, we will use mathematical notation and terminology to represent real-world issues. **CC:** QMR, JDQR

PSC 260 - Policy Making and American Society

Course Units: 1.0 The process through which public policies are originated, shaped, adopted, and applied at all levels of government in the U.S. and the impact of public policies on American society. Policies such as crime, immigration, gay rights, abortion, the environment, smoking, and others are used as case studies to examine the policy process. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS

PSC 261 - Public Opinion

Course Units: 1.0 An overview of public opinion in the United States. Topics include the content of citizens' opinions toward a wide range of political topics, the sources of people's opinions, and an evaluation of whether the opinions of the public matter (for policy, for governance, and for democracy). The course material is structured around important normative questions, such as: What is the role of citizens in a democratic society? Are citizens pliable? Do citizens organize their political thinking? Do citizens demonstrate and endorse democratic basics? **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 263 - US Environmental Policy

Course Units: 1 This course examines the emergence, development, and future directions of environmental policy within the United States. It covers early environmental policy achievements such as the Clean Air Act, the reasons for federal inaction on environmental policy since the 1990s, and new directions for policy action in the 21st century as society understands. **ISP:** ENS, STS

PSC 264 - Climate Communication

Course Units: 1

PSC 266 - Women and Politics

Course Units: 1.0 The political, social, and economic circumstances of women in the U.S. Topics include history of women's rights, the gendering of politics, women as political actors (voters, candidates, and government officials), and politically relevant differences across gender identities. Issues include gender equality (in the workplace, education and athletics), reproductive rights, and violence against women, among others. Special attention to the intersection of gender with other identities. **Prerequisite(s):** PSC 111 or SOC 100 or sophomore standing **CC:** JSPE **ISP:** AMS, GSWS

PSC 268 - Electoral Politics

Course Units: 1.0 Examination of elections in the U.S., including presidential, congressional, and state elections. Specific topics include the democratic theory of elections, candidate strategy, voter decision making, identity politics, campaign finance, and the electoral roles of the media, political parties, and campaign consultants. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 269 - Media and Politics

Course Units: 1.0 Major trends in U.S. media, politics, and political communication. The focus is on media coverage of politics as well as effects of media on the public, across various types of media sources. These will include the traditional news media, partisan media sources, and social media. The larger context is the role of media in a democratic society. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, WAC **ISP:** AMS

PSC 270 - CIA and the Art of Intelligence

Course Units: 1.0 Provides an historical background to intelligence and espionage, and offers perspectives on present day secret intelligence operations of world powers in support of their national security objectives. Discussions on intelligence analysis, evaluation, human and technical intelligence, cryptography, counter-intelligence, moles, various kinds of overt operations, US foreign policy issues and goals. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, REE

PSC 272 - The Environment, Energy, and US Politics

Course Units: 1.0 Examination of how politics and policymaking affect the air we breathe, the water we drink, and the land we live on. This course will explore key U.S. environmental issues and their scientific underpinnings as well as the connections between these issues and our collective use of natural resources. The course will review major pieces of federal environmental law in the United States and address the policy considerations, justifications, and regulatory frameworks underlying them, as well as the effectiveness of these laws in achieving a healthier environment. The course will also examine the respective roles of Congress, the executive agencies, and the courts in determining environmental policy. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, STS

PSC 273 - The Supreme Court and Judicial Politics

Course Units: 1.0 An investigation of the judicial branch of government in the U.S. that focuses on the role of judges, the functioning of courts, and leading contemporary controversies in the judicial system. Among the primary concerns of this course are: the structure of the American Judiciary, judicial selection processes, how cases originate and move through the judicial system, how judges think about and reach decisions in the cases, and the role law plays in society. In exploring these topics many actual Supreme Court cases are dissected, focusing on such issues as: gay rights, pornography, rights of disabled citizens, the rights of those accused of crimes, and free speech over the Internet, to name only a few areas. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, LAW

PSC 277 - Capital Region Political Internships

Course Units: 1.0 This class enables students to become politically active and/or gain political experience by working for elected officials, government agencies, election campaigns, interest groups, non-profit organizations, lobby firms, etc. Students draw on their internship experience and related academic work to reach a better understanding of the complexities and dynamics of politics at the state or local level. Students are permitted to enroll in this course twice, although the course will count toward the Political Science major only once. **Prerequisite(s):** Sophomore standing and permission of the instructor. **CC:** SOCS **ISP:** AMS, ENS **Note:** This course does not count towards the PSC portion of an ID major.

PSC 280T - Washington, D.C. Internship Program

Course Units: 1.0 A 10-week spring term in Washington, D.C. wherein each student is an intern either on the Hill, with a Nongovernmental agency (NGO), or with some other political, social, cultural, or scientific organization in D.C.. The internship receives one course credit. The second course is a seminar focused on a specific political theme (examples from past years include national security and foreign policy) introducing students to the policy, partisan and ideological debates within Washington. The third course is Washington, D.C.: Cultural and Political Spaces in America's Capital (AMS 251T). **Prerequisite(s):** Sophomore standing and permission of the instructor. These courses may not be taken as pass/fail. **ISP:** AMS **Note:** The internship does not count towards the PSC portion of an ID major.

PSC 282 - Health Politics and Policy

Course Units: 1.0 This course will examine the subject of health care policy in the American political system. Students will learn about the roles and functions of key actors, institutions, concepts, and principles as part of a broad overview of American health politics. From this foundation, we will develop a theoretical and practical framework to ground our analysis of current health policy issues and debates. Topics will include finance, insurance, Medicare/Medicaid, the Patient Protection and Affordable Care Act (aka "Obamacare"), prescription drug regulation, private markets, the public interest, ethics, and the role of government. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, WAC **ISP:** AMS, STS

PSC 283 - Social Movements, the Environment and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** SOC 270 **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **ISP:** AMS, ENS, STS

PSC 284 - Political Sociology

Course Units: 1.0 Issues of political power, domination, and legitimacy from a sociological perspective. Topics include the creation and maintenance of political power, the role of legitimacy and the impact of political socialization. **Cross-Listed:** SOC 240 **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AFR, AMS, GSWS

PSC 286 - The Modern Presidency

Course Units: 1.0 Case studies in Presidential leadership and administrative styles, including those of FDR, Eisenhower, Kennedy, Johnson, Reagan, Clinton, Obama, and Trump. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 287 - The Contemporary Presidency

Course Units: 1.0 The rapidly-changing Trump-era presidency in contemporary and historical context: recent developments in the institutional and narrative-based presidency, with a background examination of the administrations from Reagan through Trump. **CC:** SOCS **ISP:** AMS

PSC 289T - New Hampshire Primary Mini-Term

Course Units: 1.0 One of the most important events in every presidential election cycle is the New Hampshire primary. In this mini-term, students will analyze the New Hampshire primary through formal coursework (readings, discussions, papers, etc.). They will also experience the primary by spending three weeks in New Hampshire in late November-early December, shortly before balloting occurs early in the following year (a presidential election year). While in New Hampshire, students will volunteer with a candidate campaign organization, media outlet, or other campaign-related group. In addition, students will attend campaign events and guest lectures (by state officials, campaign staff members, journalists, scholars, etc.). This course is offered every four years consistent with the presidential election cycle. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **ISP:** AMS

PSC 302 - U.S. Energy Policy

Course Units: 1

Considers the protections afforded to individual rights and liberties by the U.S. Constitution and the Bill of Rights. Topics include freedom of speech and assembly, the right to privacy, religious freedom, equal protection and discrimination, and the due process rights of those accused of crimes. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **Cross-Listed:** ENS 302 **Prerequisite(s):** PSC 111 or PSC 112
CC: SOCS, JCHF, JSPE **ISP:** AMS, ENS, STS

PSC 361 - Political Psychology

Course Units: 1.0 The application of psychological theories to understanding the political attitudes and behavior of individuals (citizens, political leaders) as well as groups. Specific topics include stereotypes, personality, social

cognition, attitude formation, social identity theory altruism, emotion, and elite decision-making. **Prerequisite(s):** PSC 111 or PSC 112 or PSY 100 **CC:** SOCS, WAC

PSC 364 - Law and Film

Course Units: 1.0 This course uses the medium of film as a springboard to introduce and explore concepts in legal theory, American legal culture, and the exercise of public and private power through the legal system. Specific topics of discussion include law as morality, higher versus positive law, law and gender, and the heroic lawyer mythology. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, WAC **ISP:** AMS, FLM, LAW

PSC 365 - Law, Society, and the Wire

Course Units: 1.0 HBO's The Wire is often hailed as one of the greatest television series. During its run, critics compared it to a novel or epic poem. Along with its gritty portrayal of inner city decay and the lives lived in this environment, the crime drama convincingly portrays communities and their institutions. The Wire's depiction of law is among its most nuanced and provocative features. The show easily slips among the black letter law, the law on the street, and informal law-like systems that exist among communities that do not fully subscribe to the norms of the state. This course will use the portrayal of law in The Wire to address some of the following questions: What is law? Is law only the domain of the state? What is the relationship between law and power? Is violence inherent in law? Is law inherently oppressive? If so, how do we reconcile oppression with democratic practice and human rights? **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 369 - Seminar: US Politics

Course Units: 1.0 Selected topics in U.S. politics. Content will vary from year to year. Preference to sophomore and junior political science majors. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

PSC 370 - Constitutional Law

Course Units: 1.0 An examination of the Constitutional tradition in the United States, focusing upon the structure and powers of the federal government. Topics and themes include the power of the courts to interpret the laws and the Constitution, the power of the federal government and the significance of "states' rights," federal government intervention in matters of "commerce" or economics, and the nature and expansion of executive power, especially in the area of national security. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **CC:** SOCS **ISP:** AMS, LAW

PSC 371 - Civil Rights and Civil Liberties

Course Units: 1.0 Considers the protections afforded to individual rights and liberties by the U.S. Constitution and the Bill of Rights. Topics include freedom of speech and assembly, the right to privacy, religious freedom, equal protection and discrimination, and the due process rights of those accused of crimes. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, JCHF, JSPE **ISP:** AMS, LAW

PSC 374 - Pop Culture & Rock Music in the 1970s

Course Units: 1 The 1970s was a remarkable decade of transition and turbulence. Stagflation, the oil crisis, the fall of Saigon, de?tente, Watergate, Three Mile Island, the women's movement, left-wing terrorism, urban decay, the rising gay movement, and the looming dread of ecological disaster were just a few of the trendlines. The writer Tom Wolfe dubbed the 70's the "Me decade," by which he meant the transition away from 1960s communitarianism and New Deal-style politics and towards an individualist ethos of hedonism, self-realization, and personal freedom. Rock music,

which was the dominant musical style, reflected and promoted this culture shift, emphasizing a libertine attitude and downplaying the social consciousness, egalitarianism, and anti-capitalist motifs that prevailed among the youth in the 60s. This course surveys the cultural, economic, and political landscape of the decade through the prism of rock music, which reached a zenith of aesthetic creativity, genre-expansion, and commercial success. **CC:** SOCS

Within the eight non-specified courses, beginning with the Class of 2021, two must be at the 300-level.

All students must take at least one "R" course.

Note: The presence of the "R" designation next to a course number in the registration materials (i.e., PSC 272R) denotes that the course will have a major research assignment as a central component of the course.

Students must take an additional "R" course, a seminar, or a research methods course:

Seminars:

PSC 339 - Seminar: Political Theory

Course Units: 1.0 Selected topics in political theory. Content will vary from year to year. Preference to sophomore and junior political science majors. **CC:** SOCS, WAC **ISP:** AFR, GSWS

PSC 349 - Seminar: Comparative Politics

Course Units: 1.0 Selected topics in comparative politics. Content will vary from year to year. Preference to junior and sophomore political science majors. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, WAC **ISP:** STS

PSC 359 - Seminar: International Politics

Course Units: 1.0 Selected topics in international politics. Content will vary from year to year. Preference to sophomore and junior political science majors. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS, WAC **ISP:** REE

PSC 369 - Seminar: US Politics

Course Units: 1.0 Selected topics in U.S. politics. Content will vary from year to year. Preference to sophomore and junior political science majors. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS

Research methods:

PSC 220 - Social Data Analysis

Course Units: 1.0 The analysis of social science data. Emphasis on testing substantive hypotheses by means of computer data processing and statistical techniques. **Cross-Listed:** SOC 201 **Prerequisite(s):** Any introductory social science course; a background in math is not necessary. **CC:** QMR, SOCS **ISP:** ENS

PSC 223 - Critical Comparisons in Politics

Course Units: 1.0 What does a convincing explanation in political science look like? This course will focus on how to make good comparative explanations in political science. We will explore how to do this by studying and applying key concepts, such as culture, social movements, elites, institutions, hegemony, and the state. This course will help prepare students for writing the senior thesis. **CC:** SOCS

- **Note:** Students may request from the political science chair that a research methods course in another department qualify as a methods course for satisfying the requirement

Note:

Both research courses should be taken by the end of the student's junior year as preparation for the senior project (PSC 498 and PSC 499). Students are welcome and encouraged to take more than two research courses; these are simply minimum requirements. Normally, a GPA of 3.0 is required to gain admittance to a seminar.

Requirements for Honors in Political Science:

To receive departmental honors the student must fulfill the following requirements: (1) a minimum index of 3.50 in political science; (2) completion of a political science seminar with a grade of "A minus" or better; (3) a grade of "A minus" or higher on the senior project, and (4) delivery of an oral presentation of the senior project research at the Steinmetz Symposium unless exceptional circumstances warrant an alternative forum. Students who do not attain an A minus or better grade in the seminar may still be eligible for honors if their departmental grade point average is 3.70 or higher. In addition the student must satisfy College requirements for departmental honors, which are described in the Academic Policies section of this catalog. **Note:** Students must take a seminar to qualify for honors.

Course Selection Guidelines

Placement: Students who received a score of 4 or 5 on the Advanced Placement exam for U.S. Government and Politics may earn credit for PSC 111. Students who earned a 4 or 5 on the Comparative Government and Politics Advanced Placement exam may earn one unspecified political science course credit. Credits earned from Advanced Placement exams can count toward the Political Science major or minor.

Course Numbering: These guidelines are offered so that students may make informed choices in the selection of courses appropriate to their level of education. 200-level political science courses are oriented towards a wide student audience from across the College whereas 300-level courses are focused more on advanced political science issues and therefore are more appropriate for upper-class political science majors as well as interested juniors and seniors from other majors. For subfield-specific descriptions of 200 and 300-level courses, please go to Course Listings and select the Prefix PSC.

It is important for students to know that 200-level courses are not "easier" than 300-level courses in terms of reading load, course assignments, or the amount of work and effort expected of students. That said, as a general rule, 300-level courses will be more theoretically and/or conceptually dense. Non-majors are welcome, but should understand that such courses typically will demand that students embrace key theories, concepts, frameworks, and/or methods in the discipline.

Psychology

Chair: Professor G. Bizer, J. Hart (effective 1/5/25)
Faculty: Professors C. Anderson-Hanley, G. Bizer, D. Burns, J. Fredricks, J. Hart, C. Weisse; Associate Professors C. Rogers, S. Romero, D.C. Walker; Assistant Professors A. Payir, M. Purol; Visiting Assistant Professors Z. Buchin, G. Ferguson, M. Guerrant, C. Kay
Staff: C. Mennillo (Administrative Assistant)

Course Selection Guidelines

Common Curriculum (CC): In the Common Curriculum, all psychology courses count as if they are courses in the Division of the Social Sciences, except for PSY 210 , PSY 212 , PSY 310 , PSY 313 and PSY 410 , which can be counted toward the Division of Sciences and Mathematics. PSY 200 does not count toward the Quantitative Methods Requirement (QMR).

Courses Suitable for Non-majors. All psychology courses are suitable for non-majors who have taken the prerequisite courses, with the exception of PSY 200 and PSY 300 , the required methods courses for the major.

For Neuroscience Majors and Minors only, BIO 103 and BIO 104 may be substituted for PSY 100 as the prerequisite for PSY 210 . Upon completion of PSY 210 , neuroscience students may take other Psychology courses without first completing PSY 100 .

Course Numbering: Psychology 100 or permission of the instructor is a prerequisite for all other psychology courses unless otherwise noted. 200-level courses typically treat basic topics and are appropriate to take with only PSY 100 as background. Courses that are cross-listed with other departments may have additional prerequisites. Most 300- and 400-level courses have PSY 300 as a prerequisite; these courses are appropriate for students in any class year, and for majors or non-majors, as long as they have fulfilled the prerequisites.

Seminars: Some seminars (e.g., PSY 410 , PSY 420 , PSY 430 , PSY 433 , PSY 440 , PSY 450) may offer different topics in different terms. These may be taken more than once for credit, with the permission of the instructor.

Psychology (ID), B.S.

Requirements for the Interdepartmental Major:

Before declaring an interdepartmental major with psychology, students must submit an application, which is available on the department's website.

Eight courses in psychology, including the following:

PSY 100 - Introduction to Psychology

Course Units: 1.0 This course will welcome students to psychology, the scientific study of mental andbehavioral processes. A wide range of approaches within psychology will be discussed, including neuroscience, cognitive and memory processes, learning, human development, clinical psychology, social psychology, and personality psychology. Along the way, psychological methods and the history of the field will be discussed. Upon completing this course, students will be eligible to enroll in any 200-level course in
the department. **CC:** SOCS

PSY 200 - Statistical Methods in Psychology

Course Units: 1.0 The descriptive and inferential statistical procedures used by researchers to explain and analyze their results. Mean, variance, correlation, hypothesis testing using t-test, ANOVA, and nonparametric tests. **Prerequisite(s):** PSY 100 , PSY 210 / BIO 210 or (BIO 103 and BIO 104) **ISP:** ENS

- Upper-Level Elective: One additional PSY course numbered 300 through 452. Students wishing to conduct an interdepartmental senior thesis must complete, PSY 300 prior to beginning their thesis. Please note that a grade of C- or better in PSY 200 is required to enroll in PSY 300 .

*The PSY 200 requirement may be waived for students who earned a 4 or 5 on the AP Statistics exam, or a B+ or better in ECO-243, STA-104, or STA-164. Students who elect to waive the PSY 200 requirement should understand that they may be at a deficit for PSY 300, depending on the extent to which they learned analysis of variance.

General Electives:

- Any additional five PSY courses at any level

Honors in Psychology (ID)

Interdepartmental majors who wish to earn honors will do an interdepartmental thesis. ID majors must also meet the same GPA requirements for psychology courses as full majors, although only two grades of "A" or "A minus" in psychology "core" courses will be required. Please note that PSY 300 is a prerequisite to registering for a thesis.

All proposals for honors theses must be submitted to the department administrative assistant no later than the end of the eighth week of the spring term of the junior year. The proposal should be one typewritten page describing the general area of the project, the student's preparation for the project (e.g., related course work), and the proposed faculty supervisor. Thesis proposal form is available on the department's website. Further information is available from the department administrative assistant.

Requirements for Honors in Psychology:

In addition to meeting College-wide requirements, honors in psychology requires:

1. A psychology grade point average of 3.40 or higher

2. Three grades of "A" or "A minus" in psychology "core" courses, which include:

PSY 200 - Statistical Methods in Psychology

Course Units: 1.0 The descriptive and inferential statistical procedures used by researchers to explain and analyze their results. Mean, variance, correlation, hypothesis testing using t-test, ANOVA, and nonparametric tests. **Prerequisite(s):** PSY 100 , PSY 210 / BIO 210 or (BIO 103 and BIO 104) **ISP:** ENS

PSY 210 - Neuroscience: Mind & Behavior

Course Units: 1.0 Basic concepts of brain functioning as they relate to psychological phenomena. Including methodology, neuroanatomy, and neurotransmission, important for understanding the mediation of behavior. **Cross-Listed:** BIO 210 **Prerequisite(s):** PSY 100 or (BIO 103 and BIO 104) **CC:** SET **ISP:** STS

PSY 212 - Neurobiology

Course Units: 1.0 This course focuses on fundamental concepts of neurobiology using studies from invertebrate and/or vertebrate model systems. Topics covered will include neural development, synaptic connectivity, neural plasticity, neuronal cell properties, sensory systems, and control of movement. **Cross-Listed:** BIO 242 **Prerequisite(s):** BIO 103 and BIO 104

PSY 213 - Clinical Neuropsychology

Course Units: 1.0 This course will examine the relationship between brain function and behavior, especially the evaluation and treatment of individuals across the lifespan who have cognitive deficits and brain compromise (e.g., due to injury, neurodevelopmental or degenerative processes, toxic exposure, etc.). The material is interdisciplinary, integrating across various sub-disciplines of medicine (e.g., neurology, psychiatry, radiology) and subfields of psychology (e.g. neuroscience, clinical disorders, assessment, cognitive, health). Clinical cases and research reports will be used to illustrate and characterize neuropsychological phenomena, conditions, and diagnoses. The course objectives will be accomplished through lecture, readings, discussion, guest speakers, and experiential activities (e.g., clinical interview, test administration, field experience, etc.). **Prerequisite(s):** PSY 100 or PSY 210 or BIO 210 or instructor permission

PSY 220 - Attention and Memory

Course Units: 1.0 This course will focus on how people take in information about the world around them, store that information, and retrieve it to help them solve problems. In doing so, we will discuss the seemingly paradoxical conclusion that we take in and interpret a great deal of our environment but that we also fail to notice much of it. We will also discuss how we are able to work on and manipulate the information we have taken in, and make decisions based on it, emphasizing the impact that this process has on our ability to perform many cognitive tasks. Additionally, those factors that influence how and how well we encode and later retrieve various types of information will be considered. **Prerequisite(s):** PSY 100 or (BIO 103 and BIO 104)

PSY 225 - The Psychology of Language

Course Units: 1.0 This course will present a broad overview of language and its instantiation within the human brain. We will pay particular attention to 1) the ways that neurological disorders impact language functioning, and 2) how these patterns of language breakdown inform psychological models of typical language processing. This course will cover basic anatomy as well as a survey of language related topics (e.g., speech perception, deafness, language acquisition, linguistic diversity). **Prerequisite(s):** PSY 100

PSY 230 - Social Psychology

Course Units: 1.0 This course presents an overview of the field of social psychology: We live in a world in which social factors can dramatically impact us. We will thus explore major theories and classic and contemporary research on why people think, feel, and behave the way they do in both individual and group settings. Topics may also include evolutionary and cultural perspectives, research methods and ethics in the field, and applications of social psychology to areas such as health, law, education, and public policy. **Cross-Listed:** SOC 203 **Prerequisite(s):** PSY 100 is required per the PSY Department. SOC 100 does not serve as a prerequisite.

PSY 240 - Developmental Psychology

Course Units: 1.0 This course traces the processes that influence human development across the lifespan, from infancy to old age. What are the cognitive, emotional and social behavioral milestones that occur at each significant stage of development? In what ways do human beings change as they get older, and in what ways do they stay the same? What early experiences can influence later developmental outcomes? The major theoretical perspectives that help illuminate

the developmental process, as well as the experimental and quasi-experimental methods of study, will be emphasized. **Prerequisite(s):** PSY 100 **CC:** SOCS, WAC, JCHF, JSPE

PSY 250 - Clinical Psychology 1: Disorders

Course Units: 1.0 An introduction to the diagnosis, study, and treatment of psychological disorders. Emphasis will be placed on the cause (i.e., etiology), expected outcome (i.e., prognosis), and prevalence of the major mental disorders recognized by the American Psychiatric Association in the Diagnostic and Statistical Manual for Mental Disorders. The course covers major categories of psychiatric diagnoses including Anxiety, Mood, Eating, Sexual, Trauma and Stressor-Related, Obsessive-Compulsive, Personality, Somatic, Dissociative, and Psychotic Disorders. **Prerequisite(s):** PSY 100 or PSY 210 or BIO 210 **CC:** GSPE

PSY 251 - Personality

Course Units: 1.0 This course will emphasize personality theory and research in an effort to understand individual persons. Students will come to learn more about their own and others' personality through a variety of approaches, such as traits and individual differences, psychoanalysis, personality development, self psychology, and the humanistic perspective. Drawing connections to other areas of psychological science, the course will explore how personality relates to motivation, emotion, cognition, and behavior. **Prerequisite(s):** PSY 100

PSY 300 - Research Methods in Psychology

Course Units: 1.0 Students will learn how to conduct research in psychological science, including hypothesis development, research design, data collection, scientific writing, ethical considerations, and dissemination. Students will also learn how to conduct statistical analyses using the SPSS software package, to include regression as well as analysis of within-participant and factorial designs. In the capstone assignment, students will develop their own hypotheses and design their own psychological experiments with which to test those hypotheses. **Prerequisite(s):** PSY 200 with a grade of C- or better; students who earned a B-plus or better in STA 104 , STA 164 , or ECO 243 are also eligible to enroll in PSY 300; students who earned a 4 or 5 in Statistics AP are eligible to enroll in PSY 300. **Corequisite(s):** PSY 300L **CC:** WAC, WAC-R **Lecture/Lab Hours** One lab per week.

3. A two-term thesis with a grade of "A" or "A minus"

4. An oral presentation of the student's work (usually at the Steinmetz Symposium)

Psychology Minor

Requirements for the Minor:

Six courses in Psychology, including:

PSY 100 - Introduction to Psychology

Course Units: 1.0 This course will welcome students to psychology, the scientific study of mental andbehavioral processes. A wide range of approaches within psychology will be discussed, including neuroscience, cognitive and memory processes, learning, human development, clinical psychology, social psychology, and personality psychology. Along the way, psychological methods and the history of the field will be discussed. Upon completing

this course, students will be eligible to enroll in any 200-level course in the department. **CC:** SOCS

PSY 200 - Statistical Methods in Psychology

Course Units: 1.0 The descriptive and inferential statistical procedures used by researchers to explain and analyze their results. Mean, variance, correlation, hypothesis testing using t-test, ANOVA, and nonparametric tests. **Prerequisite(s):** PSY 100 , PSY 210 / BIO 210 or (BIO 103 and BIO 104) **ISP:** ENS

*The PSY200 requirement may be waived for students who earned a 4 or 5 on the AP Statistics exam, or a B+ or better in ECO-243, STA-104, or STA-164. Students who elect to waive the PSY200 requirement should understand that they may be at a deficit for PSY-300, depending on the extent to which they learned analysis of variance.

One course from either Area 1 or Area 2:

Area 1:

PSY 210 - Neuroscience: Mind & Behavior

Course Units: 1.0 Basic concepts of brain functioning as they relate to psychological phenomena. Including methodology, neuroanatomy, and neurotransmission, important for understanding the mediation of behavior. **Cross-Listed:** BIO 210 **Prerequisite(s):** PSY 100 or (BIO 103 and BIO 104) **CC:** SET **ISP:** STS

PSY 212 - Neurobiology

Course Units: 1.0 This course focuses on fundamental concepts of neurobiology using studies from invertebrate and/or vertebrate model systems. Topics covered will include neural development, synaptic connectivity, neural plasticity, neuronal cell properties, sensory systems, and control of movement. **Cross-Listed:** BIO 242 **Prerequisite(s):** BIO 103 and BIO 104

PSY 213 - Clinical Neuropsychology

Course Units: 1.0 This course will examine the relationship between brain function and behavior, especially the evaluation and treatment of individuals across the lifespan who have cognitive deficits and brain compromise (e.g., due to injury, neurodevelopmental or degenerative processes, toxic exposure, etc.). The material is interdisciplinary, integrating across various sub-disciplines of medicine (e.g., neurology, psychiatry, radiology) and subfields of psychology (e.g. neuroscience, clinical disorders, assessment, cognitive, health). Clinical cases and research reports will be used to illustrate and characterize neuropsychological phenomena, conditions, and diagnoses. The course objectives will be accomplished through lecture, readings, discussion, guest speakers, and experiential activities (e.g., clinical interview, test administration, field experience, etc.). **Prerequisite(s):** PSY 100 or PSY 210 or BIO 210 or instructor permission

Area 2:

PSY 220 - Attention and Memory

Course Units: 1.0 This course will focus on how people take in information about the world around them, store that information, and retrieve it to help them solve problems. In doing so, we will discuss the seemingly paradoxical conclusion that we take in and interpret a great deal of our environment but that we also fail to notice much of it. We will also discuss how we are able to work on and manipulate the information we have taken in, and make decisions

based on it, emphasizing the impact that this process has on our ability to perform many cognitive tasks. Additionally, those factors that influence how and how well we encode and later retrieve various types of information will be considered. **Prerequisite(s):** PSY 100 or (BIO 103 and BIO 104)

PSY 225 - The Psychology of Language

Course Units: 1.0 This course will present a broad overview of language and its instantiation within the human brain. We will pay particular attention to 1) the ways that neurological disorders impact language functioning, and 2) how these patterns of language breakdown inform psychological models of typical language processing. This course will cover basic anatomy as well as a survey of language related topics (e.g., speech perception, deafness, language acquisition, linguistic diversity). **Prerequisite(s):** PSY 100

One course from either Area 3 or Area 4:

Area 3:

PSY 230 - Social Psychology

Course Units: 1.0 This course presents an overview of the field of social psychology: We live in a world in which social factors can dramatically impact us. We will thus explore major theories and classic and contemporary research on why people think, feel, and behave the way they do in both individual and group settings. Topics may also include evolutionary and cultural perspectives, research methods and ethics in the field, and applications of social psychology to areas such as health, law, education, and public policy. **Cross-Listed:** SOC 203 **Prerequisite(s):** PSY 100 is required per the PSY Department. SOC 100 does not serve as a prerequisite.

PSY 240 - Developmental Psychology

Course Units: 1.0 This course traces the processes that influence human development across the lifespan, from infancy to old age. What are the cognitive, emotional and social behavioral milestones that occur at each significant stage of development? In what ways do human beings change as they get older, and in what ways do they stay the same? What early experiences can influence later developmental outcomes? The major theoretical perspectives that help illuminate the developmental process, as well as the experimental and quasi-experimental methods of study, will be emphasized. **Prerequisite(s):** PSY 100 **CC:** SOCS, WAC, JCHF, JSPE

Area 4:

PSY 250 - Clinical Psychology 1: Disorders

Course Units: 1.0 An introduction to the diagnosis, study, and treatment of psychological disorders. Emphasis will be placed on the cause (i.e., etiology), expected outcome (i.e., prognosis), and prevalence of the major mental disorders recognized by the American Psychiatric Association in the Diagnostic and Statistical Manual for Mental Disorders. The course covers major categories of psychiatric diagnoses including Anxiety, Mood, Eating, Sexual, Trauma and Stressor-Related, Obsessive-Compulsive, Personality, Somatic, Dissociative, and Psychotic Disorders. **Prerequisite(s):** PSY 100 or PSY 210 or BIO 210 **CC:** GSPE

PSY 251 - Personality

Course Units: 1.0 This course will emphasize personality theory and research in an effort to understand individual persons. Students will come to learn more about their own and others' personality through a variety of approaches, such as traits and individual differences, psychoanalysis, personality development, self psychology, and the humanistic

perspective. Drawing connections to other areas of psychological science, the course will explore how personality relates to motivation, emotion, cognition, and behavior. **Prerequisite(s):** PSY 100

2 additional PSY courses

- Any 2 additional PSY courses, which may include additional Area courses.

Psychology, B.S.

Requirements for the Major:

The following major requirements apply to students in the class of 2025 and onward, until further notice.

1. Three Foundational Courses

PSY 100 - Introduction to Psychology

Course Units: 1.0 This course will welcome students to psychology, the scientific study of mental andbehavioral processes. A wide range of approaches within psychology will be discussed, including neuroscience, cognitive and memory processes, learning, human development, clinical psychology, social psychology, and personality psychology. Along the way, psychological methods and the history of the field will be discussed. Upon completing this course, students will be eligible to enroll in any 200-level course in
the department. **CC:** SOCS

PSY 200 - Statistical Methods in Psychology

Course Units: 1.0 The descriptive and inferential statistical procedures used by researchers to explain and analyze their results. Mean, variance, correlation, hypothesis testing using t-test, ANOVA, and nonparametric tests. **Prerequisite(s):** PSY 100 , PSY 210 / BIO 210 or (BIO 103 and BIO 104) **ISP:** ENS

PSY 300 - Research Methods in Psychology

Course Units: 1.0 Students will learn how to conduct research in psychological science, including hypothesis development, research design, data collection, scientific writing, ethical considerations, and dissemination. Students will also learn how to conduct statistical analyses using the SPSS software package, to include regression as well as analysis of within-participant and factorial designs. In the capstone assignment, students will develop their own hypotheses and design their own psychological experiments with which to test those hypotheses. **Prerequisite(s):** PSY 200 with a grade of C- or better; students who earned a B-plus or better in STA 104 , STA 164 , or ECO 243 are also eligible to enroll in PSY 300; students who earned a 4 or 5 in Statistics AP are eligible to enroll in PSY 300. **Corequisite(s):** PSY 300L **CC:** WAC, WAC-R **Lecture/Lab Hours** One lab per week.

- **Note:** It is important that, if at all possible, students complete PSY 300 by the junior year. Please note that a grade of C- or better in PSY 200 is required for entry into PSY 300 .
- *The PSY200 requirement may be waived for students who earned a 4 or 5 on the AP Statistics exam, or a B+ or better in ECO-243, STA-104, or STA-164. Students who elect to waive the PSY200 requirement should understand that they may be at a deficit for PSY-300, depending on the extent to which they learned analysis of variance.

2. Area Course Requirement

At least one Area Course from each of the following four content areas. Additional courses from each Area may serve as Free Electives:

Area 1:

PSY 210 - Neuroscience: Mind & Behavior

Course Units: 1.0 Basic concepts of brain functioning as they relate to psychological phenomena. Including methodology, neuroanatomy, and neurotransmission, important for understanding the mediation of behavior. **Cross-Listed:** BIO 210 **Prerequisite(s):** PSY 100 or (BIO 103 and BIO 104) **CC:** SET **ISP:** STS

PSY 212 - Neurobiology

Course Units: 1.0 This course focuses on fundamental concepts of neurobiology using studies from invertebrate and/or vertebrate model systems. Topics covered will include neural development, synaptic connectivity, neural plasticity, neuronal cell properties, sensory systems, and control of movement. **Cross-Listed:** BIO 242 **Prerequisite(s):** BIO 103 and BIO 104

PSY 213 - Clinical Neuropsychology

Course Units: 1.0 This course will examine the relationship between brain function and behavior, especially the evaluation and treatment of individuals across the lifespan who have cognitive deficits and brain compromise (e.g., due to injury, neurodevelopmental or degenerative processes, toxic exposure, etc.). The material is interdisciplinary, integrating across various sub-disciplines of medicine (e.g., neurology, psychiatry, radiology) and subfields of psychology (e.g. neuroscience, clinical disorders, assessment, cognitive, health). Clinical cases and research reports will be used to illustrate and characterize neuropsychological phenomena, conditions, and diagnoses. The course objectives will be accomplished through lecture, readings, discussion, guest speakers, and experiential activities (e.g., clinical interview, test administration, field experience, etc.). **Prerequisite(s):** PSY 100 or PSY 210 or BIO 210 or instructor permission

Area 2:

PSY 220 - Attention and Memory

Course Units: 1.0 This course will focus on how people take in information about the world around them, store that information, and retrieve it to help them solve problems. In doing so, we will discuss the seemingly paradoxical conclusion that we take in and interpret a great deal of our environment but that we also fail to notice much of it. We will also discuss how we are able to work on and manipulate the information we have taken in, and make decisions based on it, emphasizing the impact that this process has on our ability to perform many cognitive tasks. Additionally, those factors that influence how and how well we encode and later retrieve various types of information will be considered. **Prerequisite(s):** PSY 100 or (BIO 103 and BIO 104)

PSY 225 - The Psychology of Language

Course Units: 1.0 This course will present a broad overview of language and its instantiation within the human brain. We will pay particular attention to 1) the ways that neurological disorders impact language functioning, and 2) how these patterns of language breakdown inform psychological models of typical language processing. This course will cover basic anatomy as well as a survey of language related topics (e.g., speech perception, deafness, language acquisition, linguistic diversity). **Prerequisite(s):** PSY 100

Area 3:

PSY 230 - Social Psychology

Course Units: 1.0 This course presents an overview of the field of social psychology: We live in a world in which social factors can dramatically impact us. We will thus explore major theories and classic and contemporary research on why people think, feel, and behave the way they do in both individual and group settings. Topics may also include evolutionary and cultural perspectives, research methods and ethics in the field, and applications of social psychology to areas such as health, law, education, and public policy. **Cross-Listed:** SOC 203 **Prerequisite(s):** PSY 100 is required per the PSY Department. SOC 100 does not serve as a prerequisite.

PSY 240 - Developmental Psychology

Course Units: 1.0 This course traces the processes that influence human development across the lifespan, from infancy to old age. What are the cognitive, emotional and social behavioral milestones that occur at each significant stage of development? In what ways do human beings change as they get older, and in what ways do they stay the same? What early experiences can influence later developmental outcomes? The major theoretical perspectives that help illuminate the developmental process, as well as the experimental and quasi-experimental methods of study, will be emphasized. **Prerequisite(s):** PSY 100 **CC:** SOCS, WAC, JCHF, JSPE

Area 4:

PSY 250 - Clinical Psychology 1: Disorders

Course Units: 1.0 An introduction to the diagnosis, study, and treatment of psychological disorders. Emphasis will be placed on the cause (i.e., etiology), expected outcome (i.e., prognosis), and prevalence of the major mental disorders recognized by the American Psychiatric Association in the Diagnostic and Statistical Manual for Mental Disorders. The course covers major categories of psychiatric diagnoses including Anxiety, Mood, Eating, Sexual, Trauma and Stressor-Related, Obsessive-Compulsive, Personality, Somatic, Dissociative, and Psychotic Disorders. **Prerequisite(s):** PSY 100 or PSY 210 or BIO 210 **CC:** GSPE

PSY 251 - Personality

Course Units: 1.0 This course will emphasize personality theory and research in an effort to understand individual persons. Students will come to learn more about their own and others' personality through a variety of approaches, such as traits and individual differences, psychoanalysis, personality development, self psychology, and the humanistic perspective. Drawing connections to other areas of psychological science, the course will explore how personality relates to motivation, emotion, cognition, and behavior. **Prerequisite(s):** PSY 100

3. Laboratory Course Requirement:

One Laboratory Course from the following. Additional Laboratory Courses may serve as Upper-Level Electives or as Free Electives.

PSY 310 - Cognitive Neuroscience

Course Units: 1.0 This course will present in depth the present understanding of the brain mechanisms that give rise to many mental processes, including attention, memory, language production, and comprehension, numerical processing, reasoning, emotions, and executive functioning. Weekly laboratory sessions will cover major methodologies used in

cognitive neuroscience, including brain imaging and neural network simulation. **Prerequisite(s):** (PSY 210 or BIO 210) and PSY 220 and PSY 300 **Corequisite(s):** PSY 310L **CC:** SCLB, WAC **Lecture/Lab Hours** One lab per week.

PSY 313 - Sensation and Perception

Course Units: 1.0 The study of sensation and perception examines the physics of the real world (stimulus), how the nervous system captures information about the environment (sensation), and the translation of sensory information into meaningful events (perception). Multiple levels of analysis will be introduced including sensory physiology, psychophysiology, and psychophysics. The class will cover a variety of topics, possibly to include how the eye is not a camera, why people need glasses, how 3-D movies work, the mysteries of face blindness, and what's hiding behind your eardrum. **Prerequisite(s):** (PSY 210 or BIO 210) and PSY 300 **Corequisite(s):** PSY 313L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

PSY 330 - Advanced Personality and Social Psychology

Course Units: 1.0 Covers contemporary theory and research on (a) attitudes and social cognition (e.g., attitude formation and change; impression formation; persuasion; stereotypes and prejudice; emotion; self-regulation), (b) interpersonal relationships and group processes (e.g., romance; intergroup relations; aggression; pro- and anti-social behavior), and (c) personality and individual differences (e.g., trait structure, development, assessment, and outcomes). Weekly lab involves learning and applying topically relevant research methods. **Prerequisite(s):** PSY 300 and (PSY 230 or PSY 251) **Corequisite(s):** PSY 330L **CC:** SCLB **Lecture/Lab Hours** One lab per week.

PSY 351 - Clinical Psychology 2: Interventions

Course Units: 1.0 Survey of the major contemporary systems of psychotherapy. Includes analytic, family systems, cognitive and behavioral approaches. Students will learn theories, techniques, and processes involved in the practice of psychotherapy. Clinical diagnoses and interventions are revisited from the perspective of communications theory. The lab portion of the course will include opportunities for experiential learning, including: clinical skill development using clinical research methods for coding and analyzing factors salient in dyad and group communication (e.g., non-verbal, verbal, and other aspects of communication). **Prerequisite(s):** PSY 250 and PSY 300 **Corequisite(s):** PSY 351L **CC:** SCLB **Lecture/Lab Hours** One lab per week. **Note:** This course is designed to be taken in sequence with PSY 451 , but enrollment in PSY 451 is optional and may be taken in a subsequent year, space permitting. Also, note that this course was formerly known as Human Relations 1: Communications.

4. Seminar Requirement

One Seminar Course from the following. Additional Seminar Courses may serve as Upper-Level Electives or as Free Electives.

PSY 406 - Seminar: Psychology of Oppression

Course Units: 1 This course will provide an overview of theoretical perspectives, research methods, empirical findings, and practical applications of psychological research on intersectional oppression. We will examine in-depth issues that are central to the psychological study of oppression, such as the evolution of oppression in psychological research, practice, and society; interpersonal, institutional, and internalized influences and theories on oppression; psychological and mental health implications of oppression; and the ways in which psychological science can be applied to address these issues. **Prerequisite(s):** PSY 300 **CC:** WS

PSY 410 - Seminar in Brain and Behavior

Course Units: 1.0 This seminar will provide students with an opportunity to examine how brain processes impact behavior and psychological functioning. Students will gain experience giving oral presentations and critically evaluating empirical studies pertaining to both normal and abnormal behavior. **Cross-Listed:** BIO 211 **Prerequisite(s):** (PSY 210 or BIO 210) and PSY 300 **CC:** SET, WAC, WS

PSY 411 - Seminar in Clinical Neuropsychology

Course Units: 1.0 This seminar provides opportunity for an in-depth view into the field of Clinical Neuropsychology, which aims to explore the relationship between brain function and behavior, especially the evaluation and treatment of individuals across the lifespan who have cognitive deficits and brain compromise (e.g., due to injury, neurodevelopmental or degenerative processes, toxic exposure, etc.). The material is interdisciplinary, integrating across various sub-disciplines of medicine (e.g. neurology, psychiatry, radiology) and subfields of psychology (e.g. neuroscience, clinical disorders, assessment, cognitive, health). Clinical cases and research reports will be used to illustrate and characterize neuropsychological phenomena, conditions, and diagnoses. The small class size will facilitate engage learning through discussion of primary research literature, student presentations, and experiential activities (e.g. , clinical interview, test administration, and community engagement/service learning opportunities). **Prerequisite(s):** PSY 300 and one of the following: PSY 210 or BIO 210 or PSY 213 or PSY 220 or PSY 250 or instructors permission **CC:** WS

PSY 420 - Seminar in Cognitive Psychology

Course Units: 1.0

The aim of this course is explore the concept of emotion from behavioral- and brain-based perspectives. While trying to understand the role of emotion in behavior has been an interest for centuries, what we know about the biological underpinnings of emotion, or affect, is only decades old.
Students will become familiar with basic concepts and methods used in affective science. Course discussions will likely include material related to pleasure/pain, mental health, neurological/psychiatric illnesses, psychotropic drugs, sexuality, eating, decision-making, and emotional regulation. **Prerequisite(s):** PSY 210 or BIO 210 or PSY 220 or permission of instructor. **CC:** WS

PSY 430 - Seminar in Social Psychology

Course Units: 1.0 A selected area of social psychology. Specific topic will be announced in advance by the instructor. **Prerequisite(s):** PSY 300 or permission of instructor. **CC:** WS

PSY 432 - Seminar in Love and Death

Course Units: 1.0 This course examines two lines of inquiry, principally initiated in the 1950's and 60's by John Bowlby and Ernest Becker, respectively, which have subsequently developed into two influential contemporary theories in experimental social and personality psychology: attachment theory and terror management theory (TMT). These theories and the intellectual traditions that spawned them address two elements of life - love and death - that have far-reaching psychological consequences and philosophical implications. The course will start with discussion of Bowlby's and Becker's classic books, and as class progresses, class members will assume increased responsibility for leading discussions and examining contemporary research. Ultimately, each class member will develop his or her own questions, and tentative answers, relating to the course material, which will culminate in a significant paper. There are no prerequisites for this course. **CC:** WS

PSY 433 - Seminar in Psychology of Sports

Course Units: 1.0 In this seminar, we'll explore a variety of ways in which psychology and sports intersect. First, we'll discuss the psychology of the athlete: Which psychological mechanisms and traits predict success in competition? Next, we'll discuss the psychology of the fan: Why are we so emotionally impacted when our team wins or loses? Finally, we'll discuss the psychology of sports marketing: How do advertisers and marketers use sports to get us to buy their stuff? Readings will primarily consist of peer-reviewed journal articles from the fields of social psychology, cognitive psychology, sports psychology, marketing, and advertising. The term will conclude with each student creating a novel hypothesis relating to the psychology of sports, designing a rigorous study with which one might empirically test that hypothesis, and creating mock data that supports that hypothesis. **Prerequisite(s):** PSY 300 or permission on instructor. **CC:** WS

PSY 440 - Seminar in Human Development

Course Units: 1.0 A selected area of developmental psychology. Topic will be announced in advance by the instructor. **Prerequisite(s):** PSY 240 or PSY 240T **CC:** WS

PSY 441 - Seminar in Adolescence

Course Units: 1.0 Development during adolescence and early adulthood, including changing relations to parents, love and sexuality, moral and cognitive growth, and the establishing of identity. The seminar will use the case study method, i.e., we will analyze a series of individual people's accounts of their adolescent experience. **Prerequisite(s):** PSY 240 or PSY 251 or permission of the instructor **CC:** WS

PSY 450 - Seminar in Clinical Psychology

Course Units: 1.0 A selected area of clinical psychology. Topic will be announced in advance by the instructor. **Prerequisite(s):** PSY 250 or permission of the instructor. **CC:** WS

PSY 452 - Seminar: Eating & Body Image

Course Units: 1 This course will focus on normative and pathological body image, weight, and eating behaviors. In the beginning of the course, students will be trained to deliver the Body Project, an empirically supported cognitive-dissonance based eating disorder prevention program. Students will develop a research idea to test with their Body Project workshop participants. Over the course of the term, students will give one Body Project workshop and write a final research paper on their findings. **Prerequisite(s):** PSY 300 and PSY 250 or permission of the instructor. **CC:** WS

5. Upper-Level Elective

One additional course numbered PSY 310 through PSY 452. This requirement may be satisfied by completing any course with an appropriate course nmber, which may include an additional Lab Course or an additional Seminar Course.

6. Two Free Electives

Any two additional psychology courses except for practicum (PSY 291, PSY 292, PSY 293).

7. Senior Writing Requirement:

Psychology majors typically fulfill the College's "WS" Writing requirement by completing a Psychology Seminar. Although the requirement is called a "Senior Writing" requirement, it need not be taken in the senior year.

Senior theses or senior projects, which are not required of Psychology majors, may also be used to satisfy the College's WS Requirement.

Please note that although a Seminar is required, (See Requirement #4) a Thesis or Senior Project is optional. Completing a thesis does not satisfy the Seminar requirement.

Requirements for Honors in Psychology:

In addition to meeting College-wide requirements, honors in psychology requires:

1. A psychology grade point average of 3.40 or higher

2. Three grades of "A" or "A minus" in psychology "core" courses, which include:

PSY 200 - Statistical Methods in Psychology

Course Units: 1.0 The descriptive and inferential statistical procedures used by researchers to explain and analyze their results. Mean, variance, correlation, hypothesis testing using t-test, ANOVA, and nonparametric tests. **Prerequisite(s):** PSY 100 , PSY 210 / BIO 210 or (BIO 103 and BIO 104) **ISP:** ENS

PSY 210 - Neuroscience: Mind & Behavior

Course Units: 1.0 Basic concepts of brain functioning as they relate to psychological phenomena. Including methodology, neuroanatomy, and neurotransmission, important for understanding the mediation of behavior. **Cross-Listed:** BIO 210 **Prerequisite(s):** PSY 100 or (BIO 103 and BIO 104) **CC:** SET **ISP:** STS

PSY 212 - Neurobiology

Course Units: 1.0 This course focuses on fundamental concepts of neurobiology using studies from invertebrate and/or vertebrate model systems. Topics covered will include neural development, synaptic connectivity, neural plasticity, neuronal cell properties, sensory systems, and control of movement. **Cross-Listed:** BIO 242 **Prerequisite(s):** BIO 103 and BIO 104

PSY 213 - Clinical Neuropsychology

Course Units: 1.0 This course will examine the relationship between brain function and behavior, especially the evaluation and treatment of individuals across the lifespan who have cognitive deficits and brain compromise (e.g., due to injury, neurodevelopmental or degenerative processes, toxic exposure, etc.). The material is interdisciplinary, integrating across various sub-disciplines of medicine (e.g., neurology, psychiatry, radiology) and subfields of psychology (e.g. neuroscience, clinical disorders, assessment, cognitive, health). Clinical cases and research reports will be used to illustrate and characterize neuropsychological phenomena, conditions, and diagnoses. The course

objectives will be accomplished through lecture, readings, discussion, guest speakers, and experiential activities (e.g., clinical interview, test administration, field experience, etc.). **Prerequisite(s):** PSY 100 or PSY 210 or BIO 210 or instructor permission

PSY 220 - Attention and Memory

Course Units: 1.0 This course will focus on how people take in information about the world around them, store that information, and retrieve it to help them solve problems. In doing so, we will discuss the seemingly paradoxical conclusion that we take in and interpret a great deal of our environment but that we also fail to notice much of it. We will also discuss how we are able to work on and manipulate the information we have taken in, and make decisions based on it, emphasizing the impact that this process has on our ability to perform many cognitive tasks. Additionally, those factors that influence how and how well we encode and later retrieve various types of information will be considered. **Prerequisite(s):** PSY 100 or (BIO 103 and BIO 104)

PSY 225 - The Psychology of Language

Course Units: 1.0 This course will present a broad overview of language and its instantiation within the human brain. We will pay particular attention to 1) the ways that neurological disorders impact language functioning, and 2) how these patterns of language breakdown inform psychological models of typical language processing. This course will cover basic anatomy as well as a survey of language related topics (e.g., speech perception, deafness, language acquisition, linguistic diversity). **Prerequisite(s):** PSY 100

PSY 230 - Social Psychology

Course Units: 1.0 This course presents an overview of the field of social psychology: We live in a world in which social factors can dramatically impact us. We will thus explore major theories and classic and contemporary research on why people think, feel, and behave the way they do in both individual and group settings. Topics may also include evolutionary and cultural perspectives, research methods and ethics in the field, and applications of social psychology to areas such as health, law, education, and public policy. **Cross-Listed:** SOC 203 **Prerequisite(s):** PSY 100 is required per the PSY Department. SOC 100 does not serve as a prerequisite.

PSY 240 - Developmental Psychology

Course Units: 1.0 This course traces the processes that influence human development across the lifespan, from infancy to old age. What are the cognitive, emotional and social behavioral milestones that occur at each significant stage of development? In what ways do human beings change as they get older, and in what ways do they stay the same? What early experiences can influence later developmental outcomes? The major theoretical perspectives that help illuminate the developmental process, as well as the experimental and quasi-experimental methods of study, will be emphasized. **Prerequisite(s):** PSY 100 **CC:** SOCS, WAC, JCHF, JSPE

PSY 250 - Clinical Psychology 1: Disorders

Course Units: 1.0 An introduction to the diagnosis, study, and treatment of psychological disorders. Emphasis will be placed on the cause (i.e., etiology), expected outcome (i.e., prognosis), and prevalence of the major mental disorders recognized by the American Psychiatric Association in the Diagnostic and Statistical Manual for Mental Disorders. The course covers major categories of psychiatric diagnoses including Anxiety, Mood, Eating, Sexual, Trauma and Stressor-Related, Obsessive-Compulsive, Personality, Somatic, Dissociative, and Psychotic Disorders. **Prerequisite(s):** PSY 100 or PSY 210 or BIO 210 **CC:** GSPE

PSY 251 - Personality

Course Units: 1.0 This course will emphasize personality theory and research in an effort to understand individual persons. Students will come to learn more about their own and others' personality through a variety of approaches, such as traits and individual differences, psychoanalysis, personality development, self psychology, and the humanistic perspective. Drawing connections to other areas of psychological science, the course will explore how personality relates to motivation, emotion, cognition, and behavior. **Prerequisite(s):** PSY 100

PSY 300 - Research Methods in Psychology

Course Units: 1.0 Students will learn how to conduct research in psychological science, including hypothesis development, research design, data collection, scientific writing, ethical considerations, and dissemination. Students will also learn how to conduct statistical analyses using the SPSS software package, to include regression as well as analysis of within-participant and factorial designs. In the capstone assignment, students will develop their own hypotheses and design their own psychological experiments with which to test those hypotheses. **Prerequisite(s):** PSY 200 with a grade of C- or better; students who earned a B-plus or better in STA 104 , STA 164 , or ECO 243 are also eligible to enroll in PSY 300; students who earned a 4 or 5 in Statistics AP are eligible to enroll in PSY 300. **Corequisite(s):** PSY 300L **CC:** WAC, WAC-R **Lecture/Lab Hours** One lab per week.

3. A two-term thesis with a grade of "A" or "A minus"

4. An oral presentation of the student's work (usually at the Steinmetz Symposium)

Religious Studies

Director: Professor P. Bedford
Faculty: Professors K. Brison (Anthropology), H. Mueller (Classics), S. Berk (History), D. McMullen (Music); Associate Professor J. Lewin (English); Assistant Professors A. Khan (Anthropology), K. Wegter-McNelly; Visiting Assistant Professor L. Verchery

Religion in its varied expression informs the lives of most of the world's population, both currently and historically. It has been the inspiration for literature, art, and music, and the source of law, meaning and values, social solidarity, and conflict. Religion-Western, Eastern, and otherwise-is a vast cluster of cultural phenomena (including sacred texts, mythologies and theologies, moral codes, and every conceivable kind of ritual) that is best explored from the perspective of more than one discipline. The program is designed to enable students to gather insights from philosophy, psychology, sociology, anthropology, political science, history, literature and other disciplines by way of illuminating this practically universal form of human behavior. The academic study of religion examines religion from outside the framework of any particular belief system, and it does not aim to promote or undermine any particular religion or worldview. The program offers a major, interdepartmental major, and a minor.

Religious Studies (ID), B.A.

Requirements of the Interdepartmental Major:

At least eight courses in the program, including REL 103 and REL 300 and a Senior thesis.

Requirements for Honors in Religious Studies:

To be eligible for honors, the student must fulfill the following requirements: (1) a minimum index of 3.3 in courses in the Major; (2) a grade of at least "A minus" on the senior thesis; and (3) a grade of "distinction" or "high pass" in an oral examination based on the senior thesis. In addition, the student must satisfy College requirements for departmental honors.

Religious Studies Courses

The following is only a partial list of the classes counted towards the religious studies major and minor. See the Director of the program for a complete list.

Core Courses

REL 103 - Introduction to Religious Studies

Course Units: 1.0 This course introduces students to the academic study of religion through an investigation of central topics such as sacred space, sacred text, myth, ritual, ethics, religion and society, concepts of the divine and ultimate reality, anthropology, and others. Examples for discussion are drawn from a variety of religious traditions including Judaism, Christianity, Islam, Hinduism, and Buddhism, as well as other religious traditions, ancient and modern. Attention is also given to aspects of religion in contemporary settings. **CC:** HUL, LCC, HUM, JCHF **ISP:** REL

REL 300 - Seminar: Theory and Method in the Study of Religion

Course Units: 1.0 This course offers an introduction to the theory and methodology of the academic study of religion. It explores several of the most influential efforts to develop theories of religion and methods for its study, including approaches found in disciplines such as anthropology, sociology, psychology and phenomenology. The course adopts an historical perspective, outlining issues and developments in the field from the Enlightenment through to today. **CC:** HUM **ISP:** REL

Areas of Concentration

Judaism

AMU 125 - World Religions and Music

Course Units: 1.0 Music, deemed by some to be a gift from the Divine, continues to play an important role in the histories of all religions. Through an examination of three religions - Buddhism, Judaism, and Christianity - students will come to an understanding of the intricate relationships among music, theology, liturgy, ritual, and human religious expressions in different cultures and at different time periods. **CC:** HUM, LCC **ISP:** REL

HST 128 - The American Jewish Experience

Course Units: 1.0 Jews arrived in Britain's American colonies in 1654. In the space of 350 years their numbers increased dramatically and they made significant contributions to a plethora of areas in American society. Jews and Judaism also experienced significant changes through the encounter with the United States. But for all the gains in status and achievement, there are those who speak of a problematic future for American Jewry. **CC:** SOCS **ISP:** AMS, REL

HST 157 - Modern Jewish History

Course Units: 1.0 European, American & Middle Eastern Jewish communities from the fifteenth century, their origins and function within Christian Europe; response of the European Jewry to the Enlightenment and the growth of anti-Semitism and Zionism. **CC:** SOCS **ISP:** REE, REL

HST 158 - The Holocaust

Course Units: 1.0 European and American Jewry in the period 1933- 1945, focusing on modern anti-Semitism, the Nazi world view, German extermination policies, the response of Europe and the United States, and Jewish behavior in a time of crisis. **CC:** SOCS **ISP:** REE, REL

HST 195 - From Abraham to Mohamed and Beyond: The Early History of the Jews

Course Units: 1.0 History of the Jewish people in its first 1600 years from tribal beginnings to the destruction of the second Commonwealth. **CC:** SOCS **ISP:** REL

REL 203 - Judaism/Christianity/Islam: Comparative Perspectives

Course Units: 1.0 This course offers a comparative approach to Judaism, Christianity and Islam, three closely related religious traditions. It attempts to draw out commonalities among and differences between these traditions by focusing on their histories, their understandings of God, revelation and tradition, religion and society, and responses to social and political change. **Cross-Listed:** HST 203 **CC:** HUM, LCC, SOCS **ISP:** REL

REL 230 - Judaism and Christian Origins

Course Units: 1.0 We know that Jesus of Nazareth was Jewish, so how is it that Christianity and Judaism became separate religions? This course attempts to answer this question by investigating the nature of the relationship between earliest Christianity and Rabbinic Judaism, drawing out their shared roots in the religion and literature of ancient Israel, and exploring the diverse expressions of second temple Judaism among which the two religious traditions emerged. It also explores their distinctive religious teachings and scriptural interpretations with a particular interest in understanding how and why Christianity and Judaism, despite their commonalities, parted ways and became independent religions. **Cross-Listed:** CLS 230 **CC:** HUM, LCC, WAC **ISP:** REL

Christianity

AAH 300 - Italian Art and Architecture, 14th-15th Century

Course Units: 1.0 A study of art and architecture in Italy from 1100 to 1400 emphasizing religious, political, and cultural contexts and the role of the Byzantine tradition. Examination of paintings, sculpture, architecture, and the decorative arts in the major urban centers of the Italian peninsula, including Florence, Siena, Pisa, Rome and Milan, as well as the courts of northern Italy. Venetian topics are covered separately in AAH 206 and AAH 305. **Prerequisite(s):** One art history course or permission of the instructor. **CC:** HUM, LCC **ISP:** REL

AMU 160 - From Chant to Mozart

Course Units: 1.0 A study of compositions from the ninth century through the time of the French Revolution. Among the many topics included are Gregorian chant, music for kings and queens from the Renaissance, the effect of the Reformation and Counter-Reformation on music; the invention of opera (the predecessor of the musical); Vivaldi's concertos, sacred music by Bach and Handel; and symphonies and operas by Haydn and Mozart. This course is not intended for music majors. **CC:** HUM, JCAD, JCHF, JLIT, WAC **ISP:** REL

AMU 125 - World Religions and Music

Course Units: 1.0 Music, deemed by some to be a gift from the Divine, continues to play an important role in the histories of all religions. Through an examination of three religions - Buddhism, Judaism, and Christianity - students will come to an understanding of the intricate relationships among music, theology, liturgy, ritual, and human religious expressions in different cultures and at different time periods. **CC:** HUM, LCC **ISP:** REL

AMU 212 - Bach, Handel, and their Predecessors

Course Units: 1.0 This course is a study of music composed between about 1600 and 1750. Among the topics that we explore are: recently discovered compositions by underrepresented figures such as Manuel del Surmaya of Mexico; works influenced by architecture; connections between various styles of opera and the modern-day musical; the impact of dance rhythms on vocal and instrumental music; and the role of improvisation on the one hand and strict counterpoint on the other in the development of music from the seventeenth and early eighteenth centuries. **CC:** HUM, HUL, LCC, WAC-R, JCAD, JCHF, JLIT, **ISP:** REL

AMU 340 - Early Music Seminar: Music of the Middle Ages and Renaissance

Course Units: 1.0 While distant in time, music of the Middle Ages and Renaissance resonates with modern times. Students learn how court musicians, monks, jongleurs, and others dealt with topics that still matter today - from love to war - only in different musical languages. Through individual analyses of texts and music, active listening exercises, classroom discussions, papers, performances, and projects, students explore the lives of people living between the ninth through the sixteenth centuries. **CC:** HUL, HUM, WAC, JCAD, JCHF, JLIT **ISP:** REL

ANT 252 - Anthropology of Christianity

Course Units: 1.0 Although Christianity has its historical roots in the Mediterranean world, during its 2000 year history it has migrated to almost every geographical area of the globe giving rise to many vibrant local Christianities with distinct and culturally specific identities. While many people associate contemporary Christianity with Euro-Americans, scholars point to Christian churches dating from the 5th century in North Africa and in India. Scholars argue that the demographic center of Christianity has already shifted to the Global south. This course investigates the ways Christianity has been shaped by contact with different world cultures and the social processes and religious changes implicit in the acculturation of Christianity in diverse geographical regions and cultural contexts. Questions addresses will include: i) how has Christianity been localized in various areas of the world?; ii) what is the appeal to Pentecostalism in the global south? Is it a conservative force directing attention away from social inequalities or does it challenge social inequalities? iii) what kinds of transnational networks are formed by contemporary Christians and how do these shape new kinds of identities?; iv) what is the appeal of apparently patriarchal and conservative forms of Christianity to women, who form the majority of Christians in most areas? **CC:** LCC, SOCS **ISP:** REL

EGL 211 - Milton

Course Units: 1.0 The two sides of Milton - the high humanist poet, author of the greatest epic in English and one of the greatest religious poems in any language, and the Puritan revolutionary, defender of regicide and champion of the English commonwealth. The goal of the course will be to see if the two sides can be held separate, or if they must be seen as complementary. We will read Paradise Lost at the rate of one book per week, always trying to relate the two sides of the poet. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** REL

GRK 243 - New Testament Greek

Course Units: 1.0 The foundational text of Christianity, the New Testament also represents a fascinating social and historical document, and, as such, offers an unparalleled glimpse into provincial life under the early Roman empire. A survey of the gospels, Acts, and the letters of Paul in light of these contexts. **Prerequisite(s):** GRK 103 or equivalent. **CC:** HUL, LCC, HUM **ISP:** REL

HST 171 - Europe, Africa, and the Americas in the Era of Columbus

Course Units: 1.0 A study of the relationship of Spain and Portugal with Africa, Asia, and the Americas from the early fifteenth through the late eighteenth centuries. The course examines the early civilizations of Africa, Europe, and the Americas in the era before the voyage of Columbus and the interaction among these three worlds in the centuries after the Encounter. It concludes with an examination of the cultural legacy of Africa and Europe on the indigenous societies of the Americas and the subsequent development of multicultural and multiracial independent nations. The central role of gender relations between the civilizations, the gendered conflict that characterized the era of exploration, and the role of masculinity are all examined. **CC:** LCC, SOCS **ISP:** GSWS, LAS, REL

HST 240 - The Crusades: Christianity and Islam in Conflict

Course Units: 1.0 The conquest of Jerusalem and the Holy Land by knights from western Europe and the response of the region's Muslims, 1096-1291. Special attention is given to the development of a crusading spirit and its corruption under the influence of religious, political, and economic expediency and personal greed. **CC:** SOCS **ISP:** REL

HST 241 - Mystics, Magic, and Witchcraft in Medieval and Early Modern Europe

Course Units: 1.0 A survey of learned and popular beliefs about the influence of supernatural and occult powers on individuals and society. **CC:** SOCS **ISP:** REL

HST 245 - Occult Sciences and Societies

Course Units: 1.0 Surveys the rise of occult sciences, such as ritual magic, astrology, and alchemy, and the influence of real and imagined secret societies dedicated to the preservation and transmission of such esoteric knowledge. Examines the legends associated with the suppression of the Templars in fourteenth-century France, and the revival of Platonism, Jewish Kabbalah, and pseudo-Egyptian Hermeticism in Renaissance Italy. Considers the dissemination of such ideas throughout early-modern Europe, the alchemical theories of Paracelsus and Isaac Newton, and the imagined societies of esoteric utopias. Concludes with the rise of Rosicrucianism, Freemasonry, and the Bavarian Illuminati and their possible influence on the French Revolution. **CC:** SOCS **ISP:** REL

HST 372 - Sex, Race and Gender in Latin America

Course Units: 1.0 This course examines the history of the intersection of race, sex and gender in Latin America from the pre-colonial period to the present, especially as evidenced in the changing status of women and the patriarchal order. This history traces the effect of broader societal transformations such as colonialism, imperialism, and economic and political developments on the gender division of labor and the construction of class, race and national identity. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** GSWS, LAS, REL

LAT 358 - Medieval Latin Literature and Culture

Course Units: 1.0 Latin in the Middle Ages was Western Europe's international language of ideas, politics, and literature. It was the language not only of the Bible and the Church, but also of satirists and historians, heretics and mystics, poets and storytellers. Their writings are the vital link between Classical antiquity and the modern literatures of Europe. Students sample this vast literature through readings in the original and become acquainted with the social,

intellectual, and cultural climate that produced it. Throughout the course, students develop their Latin reading skills (with attention to the differences between Classical and later Latin). Readings cover a range of authors from St. Augustine to the Arch-poet and may include autobiography, letters, history, visionary literature, philosophy, lyric poetry, hymns, drinking songs, Bible texts and interpretations, legends, encyclopedias, allegorical poetry, and political theory. **Prerequisite(s):** LAT 103 or two years of secondary school Latin. **CC:** HUL, LCC, HUM **ISP:** REL

MLT 284 - Popular Religion and Politics in Latin America

Course Units: 1.0 In this course we will examine the connection between politics and popular religions in Latin America, taking a critical view of several of their manifestations without losing track of the language and "sciences" historically used to describe them. We will engage biblical, anthropological, videographic, ethnohistorical and cultural theory texts as well as oral histories and collective memories. The final goal is to tease out those ideas that have traditionally defined the terms in which we understand and explain the "popular" in religious behavior; to understand better the conflicted relationship between "popular" cultural and institutional spaces; and finally to understand why the evolution of popular religions in Latin America cannot be examined without also taking into account their political economy. **CC:** HUM, LCC **ISP:** AFR, LAS, REL

PHL 261 - Philosophy of Religion

Course Units: 1.0 Current research in philosophical theology about language, possible worlds, and evidence used to address issues such as whether moral obligation can depend upon God's will, whether God's power is limited by the possible, whether God owns us, whether it is reasonable to bet on the existence of God. **CC:** HUM **ISP:** REL

REL 203 - Judaism/Christianity/Islam: Comparative Perspectives

Course Units: 1.0 This course offers a comparative approach to Judaism, Christianity and Islam, three closely related religious traditions. It attempts to draw out commonalities among and differences between these traditions by focusing on their histories, their understandings of God, revelation and tradition, religion and society, and responses to social and political change. **Cross-Listed:** HST 203 **CC:** HUM, LCC, SOCS **ISP:** REL

REL 230 - Judaism and Christian Origins

Course Units: 1.0 We know that Jesus of Nazareth was Jewish, so how is it that Christianity and Judaism became separate religions? This course attempts to answer this question by investigating the nature of the relationship between earliest Christianity and Rabbinic Judaism, drawing out their shared roots in the religion and literature of ancient Israel, and exploring the diverse expressions of second temple Judaism among which the two religious traditions emerged. It also explores their distinctive religious teachings and scriptural interpretations with a particular interest in understanding how and why Christianity and Judaism, despite their commonalities, parted ways and became independent religions. **Cross-Listed:** CLS 230 **CC:** HUM, LCC, WAC **ISP:** REL

Islam

AAH 101 - Islamic Art and Architecture

Course Units: 1.0 A broad and select survey of the art and architecture of Islamic cultures from the 7th through the 16th centuries that will stress the religious, social, economic, and historical contexts within which Islamic arts and architecture developed. We will study a variety of arts in addition to the traditional architecture, painting and sculpture familiar to students in Western art history surveys, including calligraphy and book painting, metalwork, ceramics, glass, carpets and textiles, and gardens and landscape design. **CC:** LCC, HUM **ISP:** AIS, REL

AAH 286 - Art and Religion of the Silk Road

Course Units: 1.0 Central Asia - broadly defined as the area occupied, from East to West, by present-day western China, Mongolia, Russia, Kazakhstan, Kyrgyzstan, northern India, Pakistan, Tajikistan, Afghanistan, Uzbekistan, Turkmenistan, and Iran - has been characterized as both harsh wasteland and cultural crossroads. This course concerns the visual culture of the Silk Road of Central Asia, focusing on the roles visual culture played in establishing modes of religious imagination in medieval culture. **CC:** LCC, HUM **ISP:** AIS, REE, REL

ANT 256 - Anthropology of Islam

Course Units: 1.0 This class provides an anthropological perspective on Islam, one that tries to understand Islam as a living tradition. There are well over a billion Muslims in the world who speak countless languages and reside in dozens of nation-states. The immense diversity of Islamic practice and Muslim life is bewildering and defies any simple generalization. However, this diversity need not blind us to the themes that connect Islam and cut across Muslim life around the world. While not an exhaustive survey of Islamic practice and ways of life, this class focuses on the themes that connect Islam across diverse regions and peoples. These themes include: Islamic authority, conceptions of gender, the importance of Islamic law, and the value of Islamic community. In this class, we look beyond local variation to understand Islam as a living tradition. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AIS, REL

HST 240 - The Crusades: Christianity and Islam in Conflict

Course Units: 1.0 The conquest of Jerusalem and the Holy Land by knights from western Europe and the response of the region's Muslims, 1096-1291. Special attention is given to the development of a crusading spirit and its corruption under the influence of religious, political, and economic expediency and personal greed. **CC:** SOCS **ISP:** REL

HST 302 - Comparing Muslim Cultures

Course Units: 1.0 This course explores the history of Islam in diverse regional and temporal settings. It explores the unity of Islam, through an examination of the early history of the religion and its founding texts and tenets. However, the main emphasis of this course will be Islam's remarkable heterogeneity over time and space; the foci will be case studies drawn from across the Muslim world - in Africa, the Middle East Asia and Europe. Through readings and discussions, the course examines the following ten topics: The foundation of Islam, the expansion of Islam and conversion processes, Muslim travelers and trade, religious tolerance, women and gender in Islam, Islamic Education, religious revivalism and reform, Muslim lands under European colonial rule, Islam in the West, and the challenge of modernity. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AFR, REL

HST 401 - Seminar in Africa/Middle East

Course Units: 1.0 **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, WAC, WAC-R **ISP:** AFR, REL

PSC 343 - Women and Politics in the Muslim World

Course Units: 1.0 In this course we will study how politics and women intersect across the Muslim world, including the Middle East, Sub-Saharan Africa, Central Asia, and South Asia. Empirically, we will investigate the varied paths women's rights have taken in different national settings while examining similarities and differences in the degree to which women wield social, economic, and political power in their respective countries. We will seek theoretical explanation for women's status in the region, which varies significantly from country to country. Sample topics for discussion include the Koran and women, debates about the veil, honor killings, the impacts of oil, war, and foreign

intervention on women's status, and Muslim female prime ministers and presidents. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** GSWS, REL

REL 203 - Judaism/Christianity/Islam: Comparative Perspectives

Course Units: 1.0 This course offers a comparative approach to Judaism, Christianity and Islam, three closely related religious traditions. It attempts to draw out commonalities among and differences between these traditions by focusing on their histories, their understandings of God, revelation and tradition, religion and society, and responses to social and political change. **Cross-Listed:** HST 203 **CC:** HUM, LCC, SOCS **ISP:** REL

Religions of Asia

AAH 286 - Art and Religion of the Silk Road

Course Units: 1.0 Central Asia - broadly defined as the area occupied, from East to West, by present-day western China, Mongolia, Russia, Kazakhstan, Kyrgyzstan, northern India, Pakistan, Tajikistan, Afghanistan, Uzbekistan, Turkmenistan, and Iran - has been characterized as both harsh wasteland and cultural crossroads. This course concerns the visual culture of the Silk Road of Central Asia, focusing on the roles visual culture played in establishing modes of religious imagination in medieval culture. **CC:** LCC, HUM **ISP:** AIS, REE, REL

AMU 125 - World Religions and Music

Course Units: 1.0 Music, deemed by some to be a gift from the Divine, continues to play an important role in the histories of all religions. Through an examination of three religions - Buddhism, Judaism, and Christianity - students will come to an understanding of the intricate relationships among music, theology, liturgy, ritual, and human religious expressions in different cultures and at different time periods. **CC:** HUM, LCC **ISP:** REL

PHL 216 - Introduction to Indian Philosophy

Course Units: 1.0 An introductory survey of Hinduism, Buddhism, Jainism and Carvaka. Over the centuries, Indian philosophers inquired into the nature of reality and mind, debated epistemological issues concerning the criteria for valid knowledge, proposed paths for attaining spiritual liberation, and developed social theories for the welfare of people. Methods used by Indian philosophers include meditation, yoga, reasoning, logic, debate and observation. Some of these methods will be explored in class. **CC:** HUM, LCC **ISP:** REL

PHL 167 - Chinese Philosophy

Course Units: 1.0 An introductory survey of Confucianism, Daoism, Moism, Yin Yang, Legalism, Neo-Confucianism and Neo-Daoism. Among the theories covered in the course are Confucian theories of self-cultivation, the superior person and human nature, Menzi's theory of original human goodness, Xunzi's theory of evil human nature, Daoist theories of non-action, harmony with nature, and law of reversion, and Moist theories of universal love and non-discrimination. Many of these Chinese theories shaped Chinese civilization for over two millennia. **CC:** HUM, LCC **ISP:** REL

PHL 180 - Theories of the Good Life

Course Units: 1.0 This course takes a cross-cultural approach to theories of the good life by studying ancient Greek, Chinese, African and Hindu theories, as well as more modern versions of these theories. In class, we shall analyze and debate these theories in terms of their underlying beliefs about human nature and in terms of whether someone can actually live by these theories. **CC:** HUM, LCC **ISP:** REL

PHL 245 - Buddhist Ethics

Course Units: 1.0 Ethics is one of the three main components of the Buddhist path, the others being meditation and wisdom. In the centuries following the Buddha's death, two main branches of Buddhism developed: Theravada Buddhism and Mahayana Buddhism. The older school, Theravada, emphasized moral guidelines and meditation practices that culminate in nirvana; the Mahayana school emphasized a morality of compassion and a metaphysical theory of emptiness. In the contemporary period, Buddhists are concerned about issues relating to the environment, social justice, war, medicine and health, gender, and race. Buddhist ethical theories emphasize selflessness, moral discipline, compassion, karma and awareness. This course draws from ancient ethical texts as well as contemporary works on applying basic Buddhist principles to today's moral problems. **CC:** HUM, LCC **ISP:** REL

PHL 338 - Zen and Tibetan Buddhism

Course Units: 1.0 Mahayana Buddhist philosophy explains the nature of reality as emptiness, which means that the nature of reality is beyond (and thus empty of) words, concepts and characteristics. Mahayana Buddhism also regards compassion as the primary motivation for ethics. This course focuses on the metaphysical theories of two schools of Mahayana Buddhist philosophy: Chinese/Japanese Zen Buddhism and Tibetan Buddhism. The course examines Zen Buddhist theories of No-Self and the nature of mind that makes sudden enlightenment possible, as well as Tibetan Buddhist theories of interdependent arising and emptiness. This course is applicable to the Asian Studies and Religious Studies majors. **CC:** HUM, LCC **ISP:** REL

Religions of the Ancient Mediterranean

CLS 110 - Ancient Egypt: History and Religion

Course Units: 1.0 This course offers an overview of the history of ancient Egypt from the rise of the state under the first pharaohs (3200 BC) to its incorporation into the Hellenistic and Roman empires. Attention is given to political and social organization, foreign relations, and religion based on a study of relevant ancient texts (in translation) and archaeological evidence. **CC:** LCC, HUM **ISP:** AFR, REL

CLS 111 - Ancient Iraq: History and Religion

Course Units: 1.0 Ancient Iraq is often termed 'the cradle of civilization' since it is here that agriculture, urbanism, and writing first occurred. This course examines the early history of Iraq (ancient Mesopotamia) from the development of agriculture and permanent settlements through to the establishment of the first cities and states, down to about 1600 BCE. The class examines the social and economic contexts in which early Mesopotamian culture emerged, and it also gives attention to religious and religion-political ideas **Cross-Listed:** REL 111 **CC:** LCC, HUM **ISP:** REL

CLS 132 - Religion in the Pagan World

Course Units: 1.0 An examination of particular cults and the performance of cult in ancient Greek and Roman societies, and consideration of the relationship of the individual and the state to deity in the pre-Christian world. Emphasis on ancient sources. **CC:** LCC, HUM, JCHF **ISP:** REL

CLS 134 - Classical Art and Architecture

Course Units: 1.0 An introductory survey of the arts of Greece and Rome, including painting, sculpture, architecture, and decorative arts. Emphasis will be placed upon learning art historical and archaeological terminology and methods, the place of art and architecture in ancient society and culture, and contacts with other cultures, in addition to becoming

familiar with the most important monuments, artists, and patrons. **Cross-Listed:** AAH 110 **CC:** LCC, HUM **ISP:** REL

CLS 143 - Classical Mythology

Course Units: 1.0 Greek and Roman myths, with emphasis on the ancient sources. All readings will be in English. **CC:** LCC, HUL, HUM, JCHF, JLIT **ISP:** REL

CLS 154 - Poetry and the Cosmos

Course Units: 1.0 An examination of Greek and Roman poets' attempts to understand the origin and development of the universe, and of human beings' place in it. Readings (all in English) will include Hesiod, the pre-Socratic philosophers, and Lucretius. **CC:** HUL, LCC, HUM **ISP:** REL

CLS 161 - The Heroic Journey: Survey of Ancient Epic

Course Units: 1.0 An examination of four great epics of classical antiquity: Homer's Iliad and Odyssey, Virgil's Aeneid, and Ovid's Metamorphoses. All readings in English. **CC:** HUL, LCC, HUM

CLS 178 - Ancient World Mythology

Course Units: 1.0 The myths of Greece, Rome, and the Ancient Near East, Egypt, Sumer, Babylonia, India, et al. reveal surprising similarities and startling differences. A comparative approach illuminates the peculiar characteristics of the various traditions. No culture exists in isolation. These societies were all subject to manifold political (and sometimes even violent) "multicultural" pressures. Rome itself, whose poet Ovid composed the "Bible" of the Western mythological tradition, stood at the head of a vast amalgam of peoples from the cold forests of Northern Europe across the god-infested lands of Greece to the ancient sands of Egypt and beyond. Everywhere we look we will find the interactions and conflicts of differing peoples, traditions, gods. We will listen to their sacred stories, their myths, and, through active comparison and investigation, strive to gain a general overview of the facts, a general understanding of their differing religious conceptions, and perhaps, we may hope, a glimpse into their ancient wisdom. The course will cover broad mythical themes: creation, gods, the underworld, and heroes. Other topics will include the nature of sacrifice and ritual, ancestor-worship, the afterlife, divine kingship, the role of myth in political propaganda, the role of politics and religion in myth, gender issues, and related themes. Given the vast range of the material, our journey will of necessity be selective. Lectures will range, for example, from general presentations of one cultural system to detailed examination of one particular type of god across several cultures. Although much of the focus will be on the ancient myths of Greece, Rome, Egypt, the Near East, and India, we will examine some (relatively) more recent myths from Africa and the Americas as well. **CC:** LCC, HUM, JCHF, JLIT **ISP:** REL

HST 195 - From Abraham to Mohamed and Beyond: The Early History of the Jews

Course Units: 1.0 History of the Jewish people in its first 1600 years from tribal beginnings to the destruction of the second Commonwealth. **CC:** SOCS **ISP:** REL

REL 230 - Judaism and Christian Origins

Course Units: 1.0 We know that Jesus of Nazareth was Jewish, so how is it that Christianity and Judaism became separate religions? This course attempts to answer this question by investigating the nature of the relationship between earliest Christianity and Rabbinic Judaism, drawing out their shared roots in the religion and literature of ancient Israel, and exploring the diverse expressions of second temple Judaism among which the two religious traditions emerged. It also explores their distinctive religious teachings and scriptural interpretations with a particular interest in

understanding how and why Christianity and Judaism, despite their commonalities, parted ways and became independent religions. **Cross-Listed:** CLS 230 **CC:** HUM, LCC, WAC **ISP:** REL

Religion, Culture and Society

ANT 252 - Anthropology of Christianity

Course Units: 1.0 Although Christianity has its historical roots in the Mediterranean world, during its 2000 year history it has migrated to almost every geographical area of the globe giving rise to many vibrant local Christianities with distinct and culturally specific identities. While many people associate contemporary Christianity with Euro-Americans, scholars point to Christian churches dating from the 5th century in North Africa and in India. Scholars argue that the demographic center of Christianity has already shifted to the Global south. This course investigates the ways Christianity has been shaped by contact with different world cultures and the social processes and religious changes implicit in the acculturation of Christianity in diverse geographical regions and cultural contexts. Questions addresses will include: i) how has Christianity been localized in various areas of the world?; ii) what is the appeal to Pentecostalism in the global south? Is it a conservative force directing attention away from social inequalities or does it challenge social inequalities? iii) what kinds of transnational networks are formed by contemporary Christians and how do these shape new kinds of identities?; iv) what is the appeal of apparently patriarchal and conservative forms of Christianity to women, who form the majority of Christians in most areas? **CC:** LCC, SOCS **ISP:** REL

ANT 254 - Anthropology of Religion

Course Units: 1.0 Comparative study of religious behavior and ideology. Examines the ways that a wide array of religions help individuals to cope with life problems and reinforce social groups. Examines debates about the extent to which religion shapes human motivation and about the relationship between religion and society. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** REL

HST 372 - Sex, Race and Gender in Latin America

Course Units: 1.0 This course examines the history of the intersection of race, sex and gender in Latin America from the pre-colonial period to the present, especially as evidenced in the changing status of women and the patriarchal order. This history traces the effect of broader societal transformations such as colonialism, imperialism, and economic and political developments on the gender division of labor and the construction of class, race and national identity. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** GSWS, LAS, REL

MLT 284 - Popular Religion and Politics in Latin America

Course Units: 1.0 In this course we will examine the connection between politics and popular religions in Latin America, taking a critical view of several of their manifestations without losing track of the language and "sciences" historically used to describe them. We will engage biblical, anthropological, videographic, ethnohistorical and cultural theory texts as well as oral histories and collective memories. The final goal is to tease out those ideas that have traditionally defined the terms in which we understand and explain the "popular" in religious behavior; to understand better the conflicted relationship between "popular" cultural and institutional spaces; and finally to understand why the evolution of popular religions in Latin America cannot be examined without also taking into account their political economy. **CC:** HUM, LCC **ISP:** AFR, LAS, REL

PHL 180 - Theories of the Good Life

Course Units: 1.0 This course takes a cross-cultural approach to theories of the good life by studying ancient Greek, Chinese, African and Hindu theories, as well as more modern versions of these theories. In class, we shall analyze and

debate these theories in terms of their underlying beliefs about human nature and in terms of whether someone can actually live by these theories. **CC:** HUM, LCC **ISP:** REL

PSC 343 - Women and Politics in the Muslim World

Course Units: 1.0 In this course we will study how politics and women intersect across the Muslim world, including the Middle East, Sub-Saharan Africa, Central Asia, and South Asia. Empirically, we will investigate the varied paths women's rights have taken in different national settings while examining similarities and differences in the degree to which women wield social, economic, and political power in their respective countries. We will seek theoretical explanation for women's status in the region, which varies significantly from country to country. Sample topics for discussion include the Koran and women, debates about the veil, honor killings, the impacts of oil, war, and foreign intervention on women's status, and Muslim female prime ministers and presidents. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** GSWS, REL

REL 170 - Myth, Ritual and Magic

Course Units: 1.0 This course examines some of the theoretical issues surrounding myth, ritual and magic as well as specific examples of their cultural expression. How do people make sense of themselves, their society and the world through myth and ritual? How do cosmology and belief systems help them gain and organize knowledge about the world and themselves? The course will be examining a number of "occult" and "esoteric" practices, that is, practices that were not commonly known to all members of society, including Sufism, kabbalah, alchemy, and shamanism. **Cross-Listed:** ANT 170 **CC:** HUM, LCC **ISP:** REE, REL **Note:** Electives (only one cross-listed course can count for the major or minor)

REL 201 - Darwin and Design

Course Units: 1 "A bird's wings are designed for the purpose of flying." Is this a scientific statement? Is it testable? Is it true (in any sense)? For thousands of years humans have looked at the natural world and perceived evidence of design and *telos* (purpose). The scientific theory of biological evolution, most famously associated with Charles Darwin, undercut this tradition by providing a testable (and subsequently well-validated) non-telic explanation of biological complexity. This course examines the history of the concept of organismal design in Western thought, Darwin's pivotal place in that history, and the subsequent development of the idea up to the present day, including the recent controversy surround the so-called "theory of intelligent design." **CC:** HUM, WAC

REL 203 - Judaism/Christianity/Islam: Comparative Perspectives

Course Units: 1.0 This course offers a comparative approach to Judaism, Christianity and Islam, three closely related religious traditions. It attempts to draw out commonalities among and differences between these traditions by focusing on their histories, their understandings of God, revelation and tradition, religion and society, and responses to social and political change. **Cross-Listed:** HST 203 **CC:** HUM, LCC, SOCS **ISP:** REL

REL 271 - Religion and Food

Course Units: 1.0 Why do we eat the things we eat in the way we eat them? Used in religious rituals, food can become a potent symbolic expression of people's relationships to one another, the world, and to the Ultimate. Historically, food has been an integral part of religious activity through practices such as preparation, consumption, and fasting. In order to understand these practices better, the course begins with a brief exploration of how food functions in culture generally to create and sustain meaning. The bulk of the course investigates the place of food in the rituals and beliefs of four of the world's great religious traditions: Judaism, Islam Hinduism and Christianity. The course also examines the phenomena of over- and under-eating in light of the importance given to feasting and fasting in these religious traditions. **CC:** HUM, LCC **ISP:** LAW, REL

REL 280 - Religion and Science

Course Units: 1.0 This course explores the historical and contemporary relations between several of the world's major religions and the natural sciences. The presently pervasive "conflict" view is examined, along with alternative views. The course assumes no background in science beyond high school, nor adherence to any particular religious tradition. **CC:** HUM **ISP:** REL

REL 282 - Entaglement

Course Units: 1 Quantum entanglement is one of the most remarkable ideas emerging from the natural sciences in the twentieth century. Identified as a consequence of quantum theory already in the 1930s, it was confirmed as a physical phenomenon only in the 1980s. The broader implications of living in an "entangled" world are only beginning to be felt outside the halls of physics departments. In this course we explore the meaning of quantum entanglement and its potential significance for relational accounts of personhood, life, the cosmos, and God. We begin the course by considering briefly the turn to "relationality" in much contemporary philosophical and religious thought. With this broader intellectual background in place, we devote several weeks to exploring the philosophical structure and meaning quantum theory. We then turn back the clock and examine the concepts of "locality" and "separateness" in so-called "classical" physics (i.e., physics before quantum theory and -- we now know -- by the world itself. The material up to this point in the course prepares us for the next crucial step: working through and discussing the implications of two now-famous scientific papers: first, the so-called "EPR Paper" written by Albert Einstein and two of his colleagues in 1935 and, second, the so-called "Bell's Theorem Paper" written by John Bell in 1964 which uncovered an experimental constraint entailed by any theory that respects locality and separability. The significance of Bells' work lies in the fact that both quantum theory and subsequent experiments *violate* these constraints. Apparently, and very much contrary to what Einstein believed, we live in a "nonlocal," "nonseparable" or "entangled" world. Although Bell's work initially went unnoticed, a group of hippie scientist in Berkeley, California played a central role in drawing attention to its profound implications. During the remainder of the term, we engage contemporary philosophical and religious/theological scholars who seek to put quantum theory and entanglement into conversation with various humanistic and religious perspectives on meaning, ethics and God. Our goal is to think alongside these philosophical and religious/theological writers about what the discovery of quantum entanglement means for the way we think about reality and our place in it. During the final two weeks of the course we watch and critique the move *What the Bleep Do We Know?* in order to sharpen our critical skills regarding the risk of uncritically incorporating quantum ideas into humanistic discussions. Time is also given to several one-on-one checks-ins with the professor about final paper topics. **CC:** HUM

SOC 223 - Sociology of Religion

Course Units: 1.0 The role of religion and religious phenomena from an institutional, organizational, and individual perspective in contemporary and historical context, exploring the interplay between the public and private spheres. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS, REL

Religious Studies Minor

Requirements for the Minor:

REL 103 - Introduction to Religious Studies

Course Units: 1.0 This course introduces students to the academic study of religion through an investigation of central topics such as sacred space, sacred text, myth, ritual, ethics, religion and society, concepts of the divine and ultimate reality, anthropology, and others. Examples for discussion are drawn from a variety of religious traditions including

Judaism, Christianity, Islam, Hinduism, and Buddhism, as well as other religious traditions, ancient and modern. Attention is also given to aspects of religion in contemporary settings. **CC:** HUL, LCC, HUM, JCHF **ISP:** REL

- plus five other courses, including at least two 200-level courses.

Core Courses

REL 103 - Introduction to Religious Studies

Course Units: 1.0 This course introduces students to the academic study of religion through an investigation of central topics such as sacred space, sacred text, myth, ritual, ethics, religion and society, concepts of the divine and ultimate reality, anthropology, and others. Examples for discussion are drawn from a variety of religious traditions including Judaism, Christianity, Islam, Hinduism, and Buddhism, as well as other religious traditions, ancient and modern. Attention is also given to aspects of religion in contemporary settings. **CC:** HUL, LCC, HUM, JCHF **ISP:** REL

REL 300 - Seminar: Theory and Method in the Study of Religion

Course Units: 1.0 This course offers an introduction to the theory and methodology of the academic study of religion. It explores several of the most influential efforts to develop theories of religion and methods for its study, including approaches found in disciplines such as anthropology, sociology, psychology and phenomenology. The course adopts an historical perspective, outlining issues and developments in the field from the Enlightenment through to today. **CC:** HUM **ISP:** REL

Areas of Concentration

Judaism

AMU 125 - World Religions and Music

Course Units: 1.0 Music, deemed by some to be a gift from the Divine, continues to play an important role in the histories of all religions. Through an examination of three religions - Buddhism, Judaism, and Christianity - students will come to an understanding of the intricate relationships among music, theology, liturgy, ritual, and human religious expressions in different cultures and at different time periods. **CC:** HUM, LCC **ISP:** REL

HST 128 - The American Jewish Experience

Course Units: 1.0 Jews arrived in Britain's American colonies in 1654. In the space of 350 years their numbers increased dramatically and they made significant contributions to a plethora of areas in American society. Jews and Judaism also experienced significant changes through the encounter with the United States. But for all the gains in status and achievement, there are those who speak of a problematic future for American Jewry. **CC:** SOCS **ISP:** AMS, REL

HST 157 - Modern Jewish History

Course Units: 1.0 European, American & Middle Eastern Jewish communities from the fifteenth century, their origins and function within Christian Europe; response of the European Jewry to the Enlightenment and the growth of anti-Semitism and Zionism. **CC:** SOCS **ISP:** REE, REL

HST 158 - The Holocaust

Course Units: 1.0 European and American Jewry in the period 1933- 1945, focusing on modern anti-Semitism, the Nazi world view, German extermination policies, the response of Europe and the United States, and Jewish behavior in a time of crisis. **CC:** SOCS **ISP:** REE, REL

HST 195 - From Abraham to Mohamed and Beyond: The Early History of the Jews

Course Units: 1.0 History of the Jewish people in its first 1600 years from tribal beginnings to the destruction of the second Commonwealth. **CC:** SOCS **ISP:** REL

REL 203 - Judaism/Christianity/Islam: Comparative Perspectives

Course Units: 1.0 This course offers a comparative approach to Judaism, Christianity and Islam, three closely related religious traditions. It attempts to draw out commonalities among and differences between these traditions by focusing on their histories, their understandings of God, revelation and tradition, religion and society, and responses to social and political change. **Cross-Listed:** HST 203 **CC:** HUM, LCC, SOCS **ISP:** REL

REL 230 - Judaism and Christian Origins

Course Units: 1.0 We know that Jesus of Nazareth was Jewish, so how is it that Christianity and Judaism became separate religions? This course attempts to answer this question by investigating the nature of the relationship between earliest Christianity and Rabbinic Judaism, drawing out their shared roots in the religion and literature of ancient Israel, and exploring the diverse expressions of second temple Judaism among which the two religious traditions emerged. It also explores their distinctive religious teachings and scriptural interpretations with a particular interest in understanding how and why Christianity and Judaism, despite their commonalities, parted ways and became independent religions. **Cross-Listed:** CLS 230 **CC:** HUM, LCC, WAC **ISP:** REL

Christianity

AAH 300 - Italian Art and Architecture, 14th-15th Century

Course Units: 1.0 A study of art and architecture in Italy from 1100 to 1400 emphasizing religious, political, and cultural contexts and the role of the Byzantine tradition. Examination of paintings, sculpture, architecture, and the decorative arts in the major urban centers of the Italian peninsula, including Florence, Siena, Pisa, Rome and Milan, as well as the courts of northern Italy. Venetian topics are covered separately in AAH 206 and AAH 305. **Prerequisite(s):** One art history course or permission of the instructor. **CC:** HUM, LCC **ISP:** REL

AMU 160 - From Chant to Mozart

Course Units: 1.0 A study of compositions from the ninth century through the time of the French Revolution. Among the many topics included are Gregorian chant, music for kings and queens from the Renaissance, the effect of the Reformation and Counter-Reformation on music; the invention of opera (the predecessor of the musical); Vivaldi's concertos, sacred music by Bach and Handel; and symphonies and operas by Haydn and Mozart. This course is not intended for music majors. **CC:** HUM, JCAD, JCHF, JLIT, WAC **ISP:** REL

AMU 125 - World Religions and Music

Course Units: 1.0 Music, deemed by some to be a gift from the Divine, continues to play an important role in the histories of all religions. Through an examination of three religions - Buddhism, Judaism, and Christianity - students will come to an understanding of the intricate relationships among music, theology, liturgy, ritual, and human religious expressions in different cultures and at different time periods. **CC:** HUM, LCC **ISP:** REL

AMU 212 - Bach, Handel, and their Predecessors

Course Units: 1.0 This course is a study of music composed between about 1600 and 1750. Among the topics that we explore are: recently discovered compositions by underrepresented figures such as Manuel del Surmaya of Mexico; works influenced by architecture; connections between various styles of opera and the modern-day musical; the impact of dance rhythms on vocal and instrumental music; and the role of improvisation on the one hand and strict counterpoint on the other in the development of music from the seventeenth and early eighteenth centuries. **CC:** HUM, HUL, LCC, WAC-R, JCAD, JCHF, JLIT, **ISP:** REL

AMU 340 - Early Music Seminar: Music of the Middle Ages and Renaissance

Course Units: 1.0 While distant in time, music of the Middle Ages and Renaissance resonates with modern times. Students learn how court musicians, monks, jongleurs, and others dealt with topics that still matter today - from love to war - only in different musical languages. Through individual analyses of texts and music, active listening exercises, classroom discussions, papers, performances, and projects, students explore the lives of people living between the ninth through the sixteenth centuries. **CC:** HUL, HUM, WAC, JCAD, JCHF, JLIT **ISP:** REL

ANT 252 - Anthropology of Christianity

Course Units: 1.0 Although Christianity has its historical roots in the Mediterranean world, during its 2000 year history it has migrated to almost every geographical area of the globe giving rise to many vibrant local Christianities with distinct and culturally specific identities. While many people associate contemporary Christianity with Euro-Americans, scholars point to Christian churches dating from the 5th century in North Africa and in India. Scholars argue that the demographic center of Christianity has already shifted to the Global south. This course investigates the ways Christianity has been shaped by contact with different world cultures and the social processes and religious changes implicit in the acculturation of Christianity in diverse geographical regions and cultural contexts. Questions addresses will include: i) how has Christianity been localized in various areas of the world?; ii) what is the appeal to Pentecostalism in the global south? Is it a conservative force directing attention away from social inequalities or does it challenge social inequalities? iii) what kinds of transnational networks are formed by contemporary Christians and how do these shape new kinds of identities?; iv) what is the appeal of apparently patriarchal and conservative forms of Christianity to women, who form the majority of Christians in most areas? **CC:** LCC, SOCS **ISP:** REL

EGL 211 - Milton

Course Units: 1.0 The two sides of Milton - the high humanist poet, author of the greatest epic in English and one of the greatest religious poems in any language, and the Puritan revolutionary, defender of regicide and champion of the English commonwealth. The goal of the course will be to see if the two sides can be held separate, or if they must be seen as complementary. We will read Paradise Lost at the rate of one book per week, always trying to relate the two sides of the poet. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** REL

GRK 243 - New Testament Greek

Course Units: 1.0 The foundational text of Christianity, the New Testament also represents a fascinating social and historical document, and, as such, offers an unparalleled glimpse into provincial life under the early Roman empire. A survey of the gospels, Acts, and the letters of Paul in light of these contexts. **Prerequisite(s):** GRK 103 or equivalent. **CC:** HUL, LCC, HUM **ISP:** REL

HST 171 - Europe, Africa, and the Americas in the Era of Columbus

Course Units: 1.0 A study of the relationship of Spain and Portugal with Africa, Asia, and the Americas from the early fifteenth through the late eighteenth centuries. The course examines the early civilizations of Africa, Europe, and the Americas in the era before the voyage of Columbus and the interaction among these three worlds in the centuries after the Encounter. It concludes with an examination of the cultural legacy of Africa and Europe on the indigenous societies of the Americas and the subsequent development of multicultural and multiracial independent nations. The central role of gender relations between the civilizations, the gendered conflict that characterized the era of exploration, and the role of masculinity are all examined. **CC:** LCC, SOCS **ISP:** GSWS, LAS, REL

HST 240 - The Crusades: Christianity and Islam in Conflict

Course Units: 1.0 The conquest of Jerusalem and the Holy Land by knights from western Europe and the response of the region's Muslims, 1096-1291. Special attention is given to the development of a crusading spirit and its corruption under the influence of religious, political, and economic expediency and personal greed. **CC:** SOCS **ISP:** REL

HST 241 - Mystics, Magic, and Witchcraft in Medieval and Early Modern Europe

Course Units: 1.0 A survey of learned and popular beliefs about the influence of supernatural and occult powers on individuals and society. **CC:** SOCS **ISP:** REL

HST 245 - Occult Sciences and Societies

Course Units: 1.0 Surveys the rise of occult sciences, such as ritual magic, astrology, and alchemy, and the influence of real and imagined secret societies dedicated to the preservation and transmission of such esoteric knowledge. Examines the legends associated with the suppression of the Templars in fourteenth-century France, and the revival of Platonism, Jewish Kabbalah, and pseudo-Egyptian Hermeticism in Renaissance Italy. Considers the dissemination of such ideas throughout early-modern Europe, the alchemical theories of Paracelsus and Isaac Newton, and the imagined societies of esoteric utopias. Concludes with the rise of Rosicrucianism, Freemasonry, and the Bavarian Illuminati and their possible influence on the French Revolution. **CC:** SOCS **ISP:** REL

HST 372 - Sex, Race and Gender in Latin America

Course Units: 1.0 This course examines the history of the intersection of race, sex and gender in Latin America from the pre-colonial period to the present, especially as evidenced in the changing status of women and the patriarchal order. This history traces the effect of broader societal transformations such as colonialism, imperialism, and economic and political developments on the gender division of labor and the construction of class, race and national identity. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** GSWS, LAS, REL

LAT 358 - Medieval Latin Literature and Culture

Course Units: 1.0 Latin in the Middle Ages was Western Europe's international language of ideas, politics, and literature. It was the language not only of the Bible and the Church, but also of satirists and historians, heretics and mystics, poets and storytellers. Their writings are the vital link between Classical antiquity and the modern literatures of Europe. Students sample this vast literature through readings in the original and become acquainted with the social, intellectual, and cultural climate that produced it. Throughout the course, students develop their Latin reading skills (with attention to the differences between Classical and later Latin). Readings cover a range of authors from St. Augustine to the Arch-poet and may include autobiography, letters, history, visionary literature, philosophy, lyric poetry, hymns, drinking songs, Bible texts and interpretations, legends, encyclopedias, allegorical poetry, and political theory. **Prerequisite(s):** LAT 103 or two years of secondary school Latin. **CC:** HUL, LCC, HUM **ISP:** REL

MLT 284 - Popular Religion and Politics in Latin America

Course Units: 1.0 In this course we will examine the connection between politics and popular religions in Latin America, taking a critical view of several of their manifestations without losing track of the language and "sciences" historically used to describe them. We will engage biblical, anthropological, videographic, ethnohistorical and cultural theory texts as well as oral histories and collective memories. The final goal is to tease out those ideas that have traditionally defined the terms in which we understand and explain the "popular" in religious behavior; to understand better the conflicted relationship between "popular" cultural and institutional spaces; and finally to understand why the evolution of popular religions in Latin America cannot be examined without also taking into account their political economy. **CC:** HUM, LCC **ISP:** AFR, LAS, REL

PHL 261 - Philosophy of Religion

Course Units: 1.0 Current research in philosophical theology about language, possible worlds, and evidence used to address issues such as whether moral obligation can depend upon God's will, whether God's power is limited by the possible, whether God owns us, whether it is reasonable to bet on the existence of God. **CC:** HUM **ISP:** REL

REL 230 - Judaism and Christian Origins

Course Units: 1.0 We know that Jesus of Nazareth was Jewish, so how is it that Christianity and Judaism became separate religions? This course attempts to answer this question by investigating the nature of the relationship between earliest Christianity and Rabbinic Judaism, drawing out their shared roots in the religion and literature of ancient Israel, and exploring the diverse expressions of second temple Judaism among which the two religious traditions emerged. It also explores their distinctive religious teachings and scriptural interpretations with a particular interest in understanding how and why Christianity and Judaism, despite their commonalities, parted ways and became independent religions. **Cross-Listed:** CLS 230 **CC:** HUM, LCC, WAC **ISP:** REL

Islam

AAH 101 - Islamic Art and Architecture

Course Units: 1.0 A broad and select survey of the art and architecture of Islamic cultures from the 7th through the 16th centuries that will stress the religious, social, economic, and historical contexts within which Islamic arts and architecture developed. We will study a variety of arts in addition to the traditional architecture, painting and sculpture familiar to students in Western art history surveys, including calligraphy and book painting, metalwork, ceramics, glass, carpets and textiles, and gardens and landscape design. **CC:** LCC, HUM **ISP:** AIS, REL

AAH 286 - Art and Religion of the Silk Road

Course Units: 1.0 Central Asia - broadly defined as the area occupied, from East to West, by present-day western China, Mongolia, Russia, Kazakhstan, Kyrgyzstan, northern India, Pakistan, Tajikistan, Afghanistan, Uzbekistan, Turkmenistan, and Iran - has been characterized as both harsh wasteland and cultural crossroads. This course concerns the visual culture of the Silk Road of Central Asia, focusing on the roles visual culture played in establishing modes of religious imagination in medieval culture. **CC:** LCC, HUM **ISP:** AIS, REE, REL

ANT 256 - Anthropology of Islam

Course Units: 1.0 This class provides an anthropological perspective on Islam, one that tries to understand Islam as a living tradition. There are well over a billion Muslims in the world who speak countless languages and reside in dozens of nation-states. The immense diversity of Islamic practice and Muslim life is bewildering and defies any simple generalization. However, this diversity need not blind us to the themes that connect Islam and cut across Muslim life around the world. While not an exhaustive survey of Islamic practice and ways of life, this class focuses on the themes that connect Islam across diverse regions and peoples. These themes include: Islamic authority, conceptions of gender,

the importance of Islamic law, and the value of Islamic community. In this class, we look beyond local variation to understand Islam as a living tradition. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AIS, REL

HST 240 - The Crusades: Christianity and Islam in Conflict

Course Units: 1.0 The conquest of Jerusalem and the Holy Land by knights from western Europe and the response of the region's Muslims, 1096-1291. Special attention is given to the development of a crusading spirit and its corruption under the influence of religious, political, and economic expediency and personal greed. **CC:** SOCS **ISP:** REL

HST 302 - Comparing Muslim Cultures

Course Units: 1.0 This course explores the history of Islam in diverse regional and temporal settings. It explores the unity of Islam, through an examination of the early history of the religion and its founding texts and tenets. However, the main emphasis of this course will be Islam's remarkable heterogeneity over time and space; the foci will be case studies drawn from across the Muslim world - in Africa, the Middle East Asia and Europe. Through readings and discussions, the course examines the following ten topics: The foundation of Islam, the expansion of Islam and conversion processes, Muslim travelers and trade, religious tolerance, women and gender in Islam, Islamic Education, religious revivalism and reform, Muslim lands under European colonial rule, Islam in the West, and the challenge of modernity. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AFR, REL

HST 401 - Seminar in Africa/Middle East

Course Units: 1.0 **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, WAC, WAC-R **ISP:** AFR, REL

PSC 343 - Women and Politics in the Muslim World

Course Units: 1.0 In this course we will study how politics and women intersect across the Muslim world, including the Middle East, Sub-Saharan Africa, Central Asia, and South Asia. Empirically, we will investigate the varied paths women's rights have taken in different national settings while examining similarities and differences in the degree to which women wield social, economic, and political power in their respective countries. We will seek theoretical explanation for women's status in the region, which varies significantly from country to country. Sample topics for discussion include the Koran and women, debates about the veil, honor killings, the impacts of oil, war, and foreign intervention on women's status, and Muslim female prime ministers and presidents. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** GSWS, REL

REL 203 - Judaism/Christianity/Islam: Comparative Perspectives

Course Units: 1.0 This course offers a comparative approach to Judaism, Christianity and Islam, three closely related religious traditions. It attempts to draw out commonalities among and differences between these traditions by focusing on their histories, their understandings of God, revelation and tradition, religion and society, and responses to social and political change. **Cross-Listed:** HST 203 **CC:** HUM, LCC, SOCS **ISP:** REL

Religions of Asia

AAH 286 - Art and Religion of the Silk Road

Course Units: 1.0 Central Asia - broadly defined as the area occupied, from East to West, by present-day western China, Mongolia, Russia, Kazakhstan, Kyrgyzstan, northern India, Pakistan, Tajikistan, Afghanistan, Uzbekistan,

Turkmenistan, and Iran - has been characterized as both harsh wasteland and cultural crossroads. This course concerns the visual culture of the Silk Road of Central Asia, focusing on the roles visual culture played in establishing modes of religious imagination in medieval culture. **CC:** LCC, HUM **ISP:** AIS, REE, REL

AMU 125 - World Religions and Music

Course Units: 1.0 Music, deemed by some to be a gift from the Divine, continues to play an important role in the histories of all religions. Through an examination of three religions - Buddhism, Judaism, and Christianity - students will come to an understanding of the intricate relationships among music, theology, liturgy, ritual, and human religious expressions in different cultures and at different time periods. **CC:** HUM, LCC **ISP:** REL

PHL 216 - Introduction to Indian Philosophy

Course Units: 1.0 An introductory survey of Hinduism, Buddhism, Jainism and Carvaka. Over the centuries, Indian philosophers inquired into the nature of reality and mind, debated epistemological issues concerning the criteria for valid knowledge, proposed paths for attaining spiritual liberation, and developed social theories for the welfare of people. Methods used by Indian philosophers include meditation, yoga, reasoning, logic, debate and observation. Some of these methods will be explored in class. **CC:** HUM, LCC **ISP:** REL

PHL 167 - Chinese Philosophy

Course Units: 1.0 An introductory survey of Confucianism, Daoism, Moism, Yin Yang, Legalism, Neo-Confucianism and Neo-Daoism. Among the theories covered in the course are Confucian theories of self-cultivation, the superior person and human nature, Menzi's theory of original human goodness, Xunzi's theory of evil human nature, Daoist theories of non-action, harmony with nature, and law of reversion, and Moist theories of universal love and non-discrimination. Many of these Chinese theories shaped Chinese civilization for over two millennia. **CC:** HUM, LCC **ISP:** REL

PHL 180 - Theories of the Good Life

Course Units: 1.0 This course takes a cross-cultural approach to theories of the good life by studying ancient Greek, Chinese, African and Hindu theories, as well as more modern versions of these theories. In class, we shall analyze and debate these theories in terms of their underlying beliefs about human nature and in terms of whether someone can actually live by these theories. **CC:** HUM, LCC **ISP:** REL

PHL 245 - Buddhist Ethics

Course Units: 1.0 Ethics is one of the three main components of the Buddhist path, the others being meditation and wisdom. In the centuries following the Buddha's death, two main branches of Buddhism developed: Theravada Buddhism and Mahayana Buddhism. The older school, Theravada, emphasized moral guidelines and meditation practices that culminate in nirvana; the Mahayana school emphasized a morality of compassion and a metaphysical theory of emptiness. In the contemporary period, Buddhists are concerned about issues relating to the environment, social justice, war, medicine and health, gender, and race. Buddhist ethical theories emphasize selflessness, moral discipline, compassion, karma and awareness. This course draws from ancient ethical texts as well as contemporary works on applying basic Buddhist principles to today's moral problems. **CC:** HUM, LCC **ISP:** REL

PHL 338 - Zen and Tibetan Buddhism

Course Units: 1.0 Mahayana Buddhist philosophy explains the nature of reality as emptiness, which means that the nature of reality is beyond (and thus empty of) words, concepts and characteristics. Mahayana Buddhism also regards compassion as the primary motivation for ethics. This course focuses on the metaphysical theories of two schools of

Mahayana Buddhist philosophy: Chinese/Japanese Zen Buddhism and Tibetan Buddhism. The course examines Zen Buddhist theories of No-Self and the nature of mind that makes sudden enlightenment possible, as well as Tibetan Buddhist theories of interdependent arising and emptiness. This course is applicable to the Asian Studies and Religious Studies majors. **CC:** HUM, LCC **ISP:** REL

Religions of the Ancient Mediterranean

CLS 110 - Ancient Egypt: History and Religion

Course Units: 1.0 This course offers an overview of the history of ancient Egypt from the rise of the state under the first pharaohs (3200 BC) to its incorporation into the Hellenistic and Roman empires. Attention is given to political and social organization, foreign relations, and religion based on a study of relevant ancient texts (in translation) and archaeological evidence. **CC:** LCC, HUM **ISP:** AFR, REL

CLS 111 - Ancient Iraq: History and Religion

Course Units: 1.0 Ancient Iraq is often termed 'the cradle of civilization' since it is here that agriculture, urbanism, and writing first occurred. This course examines the early history of Iraq (ancient Mesopotamia) from the development of agriculture and permanent settlements through to the establishment of the first cities and states, down to about 1600 BCE. The class examines the social and economic contexts in which early Mesopotamian culture emerged, and it also gives attention to religious and religion-political ideas **Cross-Listed:** REL 111 **CC:** LCC, HUM **ISP:** REL

CLS 132 - Religion in the Pagan World

Course Units: 1.0 An examination of particular cults and the performance of cult in ancient Greek and Roman societies, and consideration of the relationship of the individual and the state to deity in the pre-Christian world. Emphasis on ancient sources. **CC:** LCC, HUM, JCHF **ISP:** REL

CLS 134 - Classical Art and Architecture

Course Units: 1.0 An introductory survey of the arts of Greece and Rome, including painting, sculpture, architecture, and decorative arts. Emphasis will be placed upon learning art historical and archaeological terminology and methods, the place of art and architecture in ancient society and culture, and contacts with other cultures, in addition to becoming familiar with the most important monuments, artists, and patrons. **Cross-Listed:** AAH 110 **CC:** LCC, HUM **ISP:** REL

CLS 143 - Classical Mythology

Course Units: 1.0 Greek and Roman myths, with emphasis on the ancient sources. All readings will be in English. **CC:** LCC, HUL, HUM, JCHF, JLIT **ISP:** REL

CLS 154 - Poetry and the Cosmos

Course Units: 1.0 An examination of Greek and Roman poets' attempts to understand the origin and development of the universe, and of human beings' place in it. Readings (all in English) will include Hesiod, the pre-Socratic philosophers, and Lucretius. **CC:** HUL, LCC, HUM **ISP:** REL

CLS 161 - The Heroic Journey: Survey of Ancient Epic

Course Units: 1.0 An examination of four great epics of classical antiquity: Homer's Iliad and Odyssey, Virgil's Aeneid, and Ovid's Metamorphoses. All readings in English. **CC:** HUL, LCC, HUM

CLS 178 - Ancient World Mythology

Course Units: 1.0 The myths of Greece, Rome, and the Ancient Near East, Egypt, Sumer, Babylonia, India, et al. reveal surprising similarities and startling differences. A comparative approach illuminates the peculiar characteristics of the various traditions. No culture exists in isolation. These societies were all subject to manifold political (and sometimes even violent) "multicultural" pressures. Rome itself, whose poet Ovid composed the "Bible" of the Western mythological tradition, stood at the head of a vast amalgam of peoples from the cold forests of Northern Europe across the god-infested lands of Greece to the ancient sands of Egypt and beyond. Everywhere we look we will find the interactions and conflicts of differing peoples, traditions, gods. We will listen to their sacred stories, their myths, and, through active comparison and investigation, strive to gain a general overview of the facts, a general understanding of their differing religious conceptions, and perhaps, we may hope, a glimpse into their ancient wisdom. The course will cover broad mythical themes: creation, gods, the underworld, and heroes. Other topics will include the nature of sacrifice and ritual, ancestor-worship, the afterlife, divine kingship, the role of myth in political propaganda, the role of politics and religion in myth, gender issues, and related themes. Given the vast range of the material, our journey will of necessity be selective. Lectures will range, for example, from general presentations of one cultural system to detailed examination of one particular type of god across several cultures. Although much of the focus will be on the ancient myths of Greece, Rome, Egypt, the Near East, and India, we will examine some (relatively) more recent myths from Africa and the Americas as well. **CC:** LCC, HUM, JCHF, JLIT **ISP:** REL

HST 195 - From Abraham to Mohamed and Beyond: The Early History of the Jews

Course Units: 1.0 History of the Jewish people in its first 1600 years from tribal beginnings to the destruction of the second Commonwealth. **CC:** SOCS **ISP:** REL

REL 230 - Judaism and Christian Origins

Course Units: 1.0 We know that Jesus of Nazareth was Jewish, so how is it that Christianity and Judaism became separate religions? This course attempts to answer this question by investigating the nature of the relationship between earliest Christianity and Rabbinic Judaism, drawing out their shared roots in the religion and literature of ancient Israel, and exploring the diverse expressions of second temple Judaism among which the two religious traditions emerged. It also explores their distinctive religious teachings and scriptural interpretations with a particular interest in understanding how and why Christianity and Judaism, despite their commonalities, parted ways and became independent religions. **Cross-Listed:** CLS 230 **CC:** HUM, LCC, WAC **ISP:** REL

Religion, Culture and Society

AMU 125 - World Religions and Music

Course Units: 1.0 Music, deemed by some to be a gift from the Divine, continues to play an important role in the histories of all religions. Through an examination of three religions - Buddhism, Judaism, and Christianity - students will come to an understanding of the intricate relationships among music, theology, liturgy, ritual, and human religious expressions in different cultures and at different time periods. **CC:** HUM, LCC **ISP:** REL

ANT 252 - Anthropology of Christianity

Course Units: 1.0 Although Christianity has its historical roots in the Mediterranean world, during its 2000 year history it has migrated to almost every geographical area of the globe giving rise to many vibrant local Christianities with distinct and culturally specific identities. While many people associate contemporary Christianity with Euro-

Americans, scholars point to Christian churches dating from the 5th century in North Africa and in India. Scholars argue that the demographic center of Christianity has already shifted to the Global south. This course investigates the ways Christianity has been shaped by contact with different world cultures and the social processes and religious changes implicit in the acculturation of Christianity in diverse geographical regions and cultural contexts. Questions addresses will include: i) how has Christianity been localized in various areas of the world?; ii) what is the appeal to Pentecostalism in the global south? Is it a conservative force directing attention away from social inequalities or does it challenge social inequalities? iii) what kinds of transnational networks are formed by contemporary Christians and how do these shape new kinds of identities?; iv) what is the appeal of apparently patriarchal and conservative forms of Christianity to women, who form the majority of Christians in most areas? **CC:** LCC, SOCS **ISP:** REL

ANT 254 - Anthropology of Religion

Course Units: 1.0 Comparative study of religious behavior and ideology. Examines the ways that a wide array of religions help individuals to cope with life problems and reinforce social groups. Examines debates about the extent to which religion shapes human motivation and about the relationship between religion and society. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** REL

HST 372 - Sex, Race and Gender in Latin America

Course Units: 1.0 This course examines the history of the intersection of race, sex and gender in Latin America from the pre-colonial period to the present, especially as evidenced in the changing status of women and the patriarchal order. This history traces the effect of broader societal transformations such as colonialism, imperialism, and economic and political developments on the gender division of labor and the construction of class, race and national identity. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** GSWS, LAS, REL

MLT 284 - Popular Religion and Politics in Latin America

Course Units: 1.0 In this course we will examine the connection between politics and popular religions in Latin America, taking a critical view of several of their manifestations without losing track of the language and "sciences" historically used to describe them. We will engage biblical, anthropological, videographic, ethnohistorical and cultural theory texts as well as oral histories and collective memories. The final goal is to tease out those ideas that have traditionally defined the terms in which we understand and explain the "popular" in religious behavior; to understand better the conflicted relationship between "popular" cultural and institutional spaces; and finally to understand why the evolution of popular religions in Latin America cannot be examined without also taking into account their political economy. **CC:** HUM, LCC **ISP:** AFR, LAS, REL

PHL 180 - Theories of the Good Life

Course Units: 1.0 This course takes a cross-cultural approach to theories of the good life by studying ancient Greek, Chinese, African and Hindu theories, as well as more modern versions of these theories. In class, we shall analyze and debate these theories in terms of their underlying beliefs about human nature and in terms of whether someone can actually live by these theories. **CC:** HUM, LCC **ISP:** REL

PSC 343 - Women and Politics in the Muslim World

Course Units: 1.0 In this course we will study how politics and women intersect across the Muslim world, including the Middle East, Sub-Saharan Africa, Central Asia, and South Asia. Empirically, we will investigate the varied paths women's rights have taken in different national settings while examining similarities and differences in the degree to which women wield social, economic, and political power in their respective countries. We will seek theoretical explanation for women's status in the region, which varies significantly from country to country. Sample topics for

discussion include the Koran and women, debates about the veil, honor killings, the impacts of oil, war, and foreign intervention on women's status, and Muslim female prime ministers and presidents. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** GSWS, REL

REL 170 - Myth, Ritual and Magic

Course Units: 1.0 This course examines some of the theoretical issues surrounding myth, ritual and magic as well as specific examples of their cultural expression. How do people make sense of themselves, their society and the world through myth and ritual? How do cosmology and belief systems help them gain and organize knowledge about the world and themselves? The course will be examining a number of "occult" and "esoteric" practices, that is, practices that were not commonly known to all members of society, including Sufism, kabbalah, alchemy, and shamanism. **Cross-Listed:** ANT 170 **CC:** HUM, LCC **ISP:** REE, REL **Note:** Electives (only one cross-listed course can count for the major or minor)

REL 201 - Darwin and Design

Course Units: 1 "A bird's wings are designed for the purpose of flying." Is this a scientific statement? Is it testable? Is it true (in any sense)? For thousands of years humans have looked at the natural world and perceived evidence of design and *telos* (purpose). The scientific theory of biological evolution, most famously associated with Charles Darwin, undercut this tradition by providing a testable (and subsequently well-validated) non-telic explanation of biological complexity. This course examines the history of the concept of organismal design in Western thought, Darwin's pivotal place in that history, and the subsequent development of the idea up to the present day, including the recent controversy surround the so-called "theory of intelligent design." **CC:** HUM, WAC

REL 203 - Judaism/Christianity/Islam: Comparative Perspectives

Course Units: 1.0 This course offers a comparative approach to Judaism, Christianity and Islam, three closely related religious traditions. It attempts to draw out commonalities among and differences between these traditions by focusing on their histories, their understandings of God, revelation and tradition, religion and society, and responses to social and political change. **Cross-Listed:** HST 203 **CC:** HUM, LCC, SOCS **ISP:** REL

REL 271 - Religion and Food

Course Units: 1.0 Why do we eat the things we eat in the way we eat them? Used in religious rituals, food can become a potent symbolic expression of people's relationships to one another, the world, and to the Ultimate. Historically, food has been an integral part of religious activity through practices such as preparation, consumption, and fasting. In order to understand these practices better, the course begins with a brief exploration of how food functions in culture generally to create and sustain meaning. The bulk of the course investigates the place of food in the rituals and beliefs of four of the world's great religious traditions: Judaism, Islam Hinduism and Christianity. The course also examines the phenomena of over- and under-eating in light of the importance given to feasting and fasting in these religious traditions. **CC:** HUM, LCC **ISP:** LAW, REL

REL 280 - Religion and Science

Course Units: 1.0 This course explores the historical and contemporary relations between several of the world's major religions and the natural sciences. The presently pervasive "conflict" view is examined, along with alternative views. The course assumes no background in science beyond high school, nor adherence to any particular religious tradition. **CC:** HUM **ISP:** REL

REL 282 - Entaglement

Course Units: 1 Quantum entanglement is one of the most remarkable ideas emerging from the natural sciences in the twentieth century. Identified as a consequence of quantum theory already in the 1930s, it was confirmed as a physical phenomenon only in the 1980s. The broader implications of living in an "entangled" world are only beginning to be felt outside the halls of physics departments. In this course we explore the meaning of quantum entanglement and its potential significance for relational accounts of personhood, life, the cosmos, and God. We begin the course by considering briefly the turn to "relationality" in much contemporary philosophical and religious thought. With this broader intellectual background in place, we devote several weeks to exploring the philosophical structure and meaning quantum theory. We then turn back the clock and examine the concepts of "locality" and "separateness" in so-called "classical" physics (i.e., physics before quantum theory and -- we now know -- by the world itself. The material up to this point in the course prepares us for the next crucial step: working through and discussing the implications of two now-famous scientific papers: first, the so-called "EPR Paper" written by Albert Einstein and two of his colleagues in 1935 and, second, the so-called "Bell's Theorem Paper" written by John Bell in 1964 which uncovered an experimental constraint entailed by any theory that respects locality and separability. The significance of Bells' work lies in the fact that both quantum theory and subsequent experiments *violate* these constraints. Apparently, and very much contrary to what Einstein believed, we live in a "nonlocal," "nonseparable" or "entangled" world. Although Bell's work initially went unnoticed, a group of hippie scientist in Berkeley, California played a central role in drawing attention to its profound implications. During the remainder of the term, we engage contemporary philosophical and religious/theological scholars who seek to put quantum theory and entanglement into conversation with various humanistic and religious perspectives on meaning, ethics and God. Our goal is to think alongside these philosophical and religious/theological writers about what the discovery of quantum entanglement means for the way we think about reality and our place in it. During the final two weeks of the course we watch and critique the move *What the Bleep Do We Know?* in order to sharpen our critical skills regarding the risk of uncritically incorporating quantum ideas into humanistic discussions. Time is also given to several one-on-one checks-ins with the professor about final paper topics. **CC:** HUM

SOC 223 - Sociology of Religion

Course Units: 1.0 The role of religion and religious phenomena from an institutional, organizational, and individual perspective in contemporary and historical context, exploring the interplay between the public and private spheres. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS, REL

Religious Studies, B.A.

Requirements for the Major:

A minimum of twelve courses including two Core Courses, plus five courses in an Area of Concentration, plus two courses devoted to a Senior thesis (REL 498 & REL 499), plus three other Religious Studies courses of which at least two will be outside the selected Area of Concentration. Relevant intermediate-level language courses can be substituted with the permission of the Director of the program.

Requirements for Honors in Religious Studies:

To be eligible for honors, the student must fulfill the following requirements: (1) a minimum index of 3.3 in courses in the Major; (2) a grade of at least "A minus" on the senior thesis; and (3) a grade of "distinction" or "high pass" in an oral examination based on the senior thesis. In addition, the student must satisfy College requirements for departmental honors.

Religious Studies Courses

The following is only a partial list of the classes counted towards the religious stdies major and mnor. See the Director of the program for a complete list.

Core Courses

REL 103 - Introduction to Religious Studies

Course Units: 1.0 This course introduces students to the academic study of religion through an investigation of central topics such as sacred space, sacred text, myth, ritual, ethics, religion and society, concepts of the divine and ultimate reality, anthropology, and others. Examples for discussion are drawn from a variety of religious traditions including Judaism, Christianity, Islam, Hinduism, and Buddhism, as well as other religious traditions, ancient and modern. Attention is also given to aspects of religion in contemporary settings. **CC:** HUL, LCC, HUM, JCHF **ISP:** REL

REL 300 - Seminar: Theory and Method in the Study of Religion

Course Units: 1.0 This course offers an introduction to the theory and methodology of the academic study of religion. It explores several of the most influential efforts to develop theories of religion and methods for its study, including approaches found in disciplines such as anthropology, sociology, psychology and phenomenology. The course adopts an historical perspective, outlining issues and developments in the field from the Enlightenment through to today. **CC:** HUM **ISP:** REL

Areas of Concentration

Judaism

AMU 125 - World Religions and Music

Course Units: 1.0 Music, deemed by some to be a gift from the Divine, continues to play an important role in the histories of all religions. Through an examination of three religions - Buddhism, Judaism, and Christianity - students will come to an understanding of the intricate relationships among music, theology, liturgy, ritual, and human religious expressions in different cultures and at different time periods. **CC:** HUM, LCC **ISP:** REL

HST 128 - The American Jewish Experience

Course Units: 1.0 Jews arrived in Britain's American colonies in 1654. In the space of 350 years their numbers increased dramatically and they made significant contributions to a plethora of areas in American society. Jews and Judaism also experienced significant changes through the encounter with the United States. But for all the gains in status and achievement, there are those who speak of a problematic future for American Jewry. **CC:** SOCS **ISP:** AMS, REL

HST 157 - Modern Jewish History

Course Units: 1.0 European, American & Middle Eastern Jewish communities from the fifteenth century, their origins and function within Christian Europe; response of the European Jewry to the Enlightenment and the growth of anti-Semitism and Zionism. **CC:** SOCS **ISP:** REE, REL

HST 158 - The Holocaust

Course Units: 1.0 European and American Jewry in the period 1933- 1945, focusing on modern anti-Semitism, the Nazi world view, German extermination policies, the response of Europe and the United States, and Jewish behavior in a time of crisis. **CC:** SOCS **ISP:** REE, REL

HST 195 - From Abraham to Mohamed and Beyond: The Early History of the Jews

Course Units: 1.0 History of the Jewish people in its first 1600 years from tribal beginnings to the destruction of the second Commonwealth. **CC:** SOCS **ISP:** REL

REL 203 - Judaism/Christianity/Islam: Comparative Perspectives

Course Units: 1.0 This course offers a comparative approach to Judaism, Christianity and Islam, three closely related religious traditions. It attempts to draw out commonalities among and differences between these traditions by focusing on their histories, their understandings of God, revelation and tradition, religion and society, and responses to social and political change. **Cross-Listed:** HST 203 **CC:** HUM, LCC, SOCS **ISP:** REL

REL 230 - Judaism and Christian Origins

Course Units: 1.0 We know that Jesus of Nazareth was Jewish, so how is it that Christianity and Judaism became separate religions? This course attempts to answer this question by investigating the nature of the relationship between earliest Christianity and Rabbinic Judaism, drawing out their shared roots in the religion and literature of ancient Israel, and exploring the diverse expressions of second temple Judaism among which the two religious traditions emerged. It also explores their distinctive religious teachings and scriptural interpretations with a particular interest in understanding how and why Christianity and Judaism, despite their commonalities, parted ways and became independent religions. **Cross-Listed:** CLS 230 **CC:** HUM, LCC, WAC **ISP:** REL

Christianity

AAH 300 - Italian Art and Architecture, 14th-15th Century

Course Units: 1.0 A study of art and architecture in Italy from 1100 to 1400 emphasizing religious, political, and cultural contexts and the role of the Byzantine tradition. Examination of paintings, sculpture, architecture, and the decorative arts in the major urban centers of the Italian peninsula, including Florence, Siena, Pisa, Rome and Milan, as well as the courts of northern Italy. Venetian topics are covered separately in AAH 206 and AAH 305. **Prerequisite(s):** One art history course or permission of the instructor. **CC:** HUM, LCC **ISP:** REL

AMU 160 - From Chant to Mozart

Course Units: 1.0 A study of compositions from the ninth century through the time of the French Revolution. Among the many topics included are Gregorian chant, music for kings and queens from the Renaissance, the effect of the Reformation and Counter-Reformation on music; the invention of opera (the predecessor of the musical); Vivaldi's concertos, sacred music by Bach and Handel; and symphonies and operas by Haydn and Mozart. This course is not intended for music majors. **CC:** HUM, JCAD, JCHF, JLIT, WAC **ISP:** REL

AMU 125 - World Religions and Music

Course Units: 1.0 Music, deemed by some to be a gift from the Divine, continues to play an important role in the histories of all religions. Through an examination of three religions - Buddhism, Judaism, and Christianity - students will come to an understanding of the intricate relationships among music, theology, liturgy, ritual, and human religious expressions in different cultures and at different time periods. **CC:** HUM, LCC **ISP:** REL

AMU 212 - Bach, Handel, and their Predecessors

Course Units: 1.0 This course is a study of music composed between about 1600 and 1750. Among the topics that we explore are: recently discovered compositions by underrepresented figures such as Manuel del Surmaya of Mexico; works influenced by architecture; connections between various styles of opera and the modern-day musical; the impact of dance rhythms on vocal and instrumental music; and the role of improvisation on the one hand and strict counterpoint on the other in the development of music from the seventeenth and early eighteenth centuries. **CC:** HUM, HUL, LCC, WAC-R, JCAD, JCHF, JLIT, **ISP:** REL

AMU 340 - Early Music Seminar: Music of the Middle Ages and Renaissance

Course Units: 1.0 While distant in time, music of the Middle Ages and Renaissance resonates with modern times. Students learn how court musicians, monks, jongleurs, and others dealt with topics that still matter today - from love to war - only in different musical languages. Through individual analyses of texts and music, active listening exercises, classroom discussions, papers, performances, and projects, students explore the lives of people living between the ninth through the sixteenth centuries. **CC:** HUL, HUM, WAC, JCAD, JCHF, JLIT **ISP:** REL

ANT 252 - Anthropology of Christianity

Course Units: 1.0 Although Christianity has its historical roots in the Mediterranean world, during its 2000 year history it has migrated to almost every geographical area of the globe giving rise to many vibrant local Christianities with distinct and culturally specific identities. While many people associate contemporary Christianity with Euro-Americans, scholars point to Christian churches dating from the 5th century in North Africa and in India. Scholars argue that the demographic center of Christianity has already shifted to the Global south. This course investigates the ways Christianity has been shaped by contact with different world cultures and the social processes and religious changes implicit in the acculturation of Christianity in diverse geographical regions and cultural contexts. Questions addresses will include: i) how has Christianity been localized in various areas of the world?; ii) what is the appeal to Pentecostalism in the global south? Is it a conservative force directing attention away from social inequalities or does it challenge social inequalities? iii) what kinds of transnational networks are formed by contemporary Christians and how do these shape new kinds of identities?; iv) what is the appeal of apparently patriarchal and conservative forms of Christianity to women, who form the majority of Christians in most areas? **CC:** LCC, SOCS **ISP:** REL

EGL 211 - Milton

Course Units: 1.0 The two sides of Milton - the high humanist poet, author of the greatest epic in English and one of the greatest religious poems in any language, and the Puritan revolutionary, defender of regicide and champion of the English commonwealth. The goal of the course will be to see if the two sides can be held separate, or if they must be seen as complementary. We will read Paradise Lost at the rate of one book per week, always trying to relate the two sides of the poet. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** REL

GRK 243 - New Testament Greek

Course Units: 1.0 The foundational text of Christianity, the New Testament also represents a fascinating social and historical document, and, as such, offers an unparalleled glimpse into provincial life under the early Roman empire. A survey of the gospels, Acts, and the letters of Paul in light of these contexts. **Prerequisite(s):** GRK 103 or equivalent. **CC:** HUL, LCC, HUM **ISP:** REL

HST 171 - Europe, Africa, and the Americas in the Era of Columbus

Course Units: 1.0 A study of the relationship of Spain and Portugal with Africa, Asia, and the Americas from the early fifteenth through the late eighteenth centuries. The course examines the early civilizations of Africa, Europe, and the Americas in the era before the voyage of Columbus and the interaction among these three worlds in the centuries after the Encounter. It concludes with an examination of the cultural legacy of Africa and Europe on the indigenous societies of the Americas and the subsequent development of multicultural and multiracial independent nations. The central role of gender relations between the civilizations, the gendered conflict that characterized the era of exploration, and the role of masculinity are all examined. **CC:** LCC, SOCS **ISP:** GSWS, LAS, REL

HST 240 - The Crusades: Christianity and Islam in Conflict

Course Units: 1.0 The conquest of Jerusalem and the Holy Land by knights from western Europe and the response of the region's Muslims, 1096-1291. Special attention is given to the development of a crusading spirit and its corruption under the influence of religious, political, and economic expediency and personal greed. **CC:** SOCS **ISP:** REL

HST 241 - Mystics, Magic, and Witchcraft in Medieval and Early Modern Europe

Course Units: 1.0 A survey of learned and popular beliefs about the influence of supernatural and occult powers on individuals and society. **CC:** SOCS **ISP:** REL

HST 245 - Occult Sciences and Societies

Course Units: 1.0 Surveys the rise of occult sciences, such as ritual magic, astrology, and alchemy, and the influence of real and imagined secret societies dedicated to the preservation and transmission of such esoteric knowledge. Examines the legends associated with the suppression of the Templars in fourteenth-century France, and the revival of Platonism, Jewish Kabbalah, and pseudo-Egyptian Hermeticism in Renaissance Italy. Considers the dissemination of such ideas throughout early-modern Europe, the alchemical theories of Paracelsus and Isaac Newton, and the imagined societies of esoteric utopias. Concludes with the rise of Rosicrucianism, Freemasonry, and the Bavarian Illuminati and their possible influence on the French Revolution. **CC:** SOCS **ISP:** REL

HST 372 - Sex, Race and Gender in Latin America

Course Units: 1.0 This course examines the history of the intersection of race, sex and gender in Latin America from the pre-colonial period to the present, especially as evidenced in the changing status of women and the patriarchal order. This history traces the effect of broader societal transformations such as colonialism, imperialism, and economic and political developments on the gender division of labor and the construction of class, race and national identity. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** GSWS, LAS, REL

LAT 358 - Medieval Latin Literature and Culture

Course Units: 1.0 Latin in the Middle Ages was Western Europe's international language of ideas, politics, and literature. It was the language not only of the Bible and the Church, but also of satirists and historians, heretics and mystics, poets and storytellers. Their writings are the vital link between Classical antiquity and the modern literatures of Europe. Students sample this vast literature through readings in the original and become acquainted with the social, intellectual, and cultural climate that produced it. Throughout the course, students develop their Latin reading skills (with attention to the differences between Classical and later Latin). Readings cover a range of authors from St. Augustine to the Arch-poet and may include autobiography, letters, history, visionary literature, philosophy, lyric poetry, hymns, drinking songs, Bible texts and interpretations, legends, encyclopedias, allegorical poetry, and political theory. **Prerequisite(s):** LAT 103 or two years of secondary school Latin. **CC:** HUL, LCC, HUM **ISP:** REL

MLT 284 - Popular Religion and Politics in Latin America

Course Units: 1.0 In this course we will examine the connection between politics and popular religions in Latin America, taking a critical view of several of their manifestations without losing track of the language and "sciences" historically used to describe them. We will engage biblical, anthropological, videographic, ethnohistorical and cultural theory texts as well as oral histories and collective memories. The final goal is to tease out those ideas that have traditionally defined the terms in which we understand and explain the "popular" in religious behavior; to understand better the conflicted relationship between "popular" cultural and institutional spaces; and finally to understand why the evolution of popular religions in Latin America cannot be examined without also taking into account their political economy. **CC:** HUM, LCC **ISP:** AFR, LAS, REL

PHL 261 - Philosophy of Religion

Course Units: 1.0 Current research in philosophical theology about language, possible worlds, and evidence used to address issues such as whether moral obligation can depend upon God's will, whether God's power is limited by the possible, whether God owns us, whether it is reasonable to bet on the existence of God. **CC:** HUM **ISP:** REL

REL 203 - Judaism/Christianity/Islam: Comparative Perspectives

Course Units: 1.0 This course offers a comparative approach to Judaism, Christianity and Islam, three closely related religious traditions. It attempts to draw out commonalities among and differences between these traditions by focusing on their histories, their understandings of God, revelation and tradition, religion and society, and responses to social and political change. **Cross-Listed:** HST 203 **CC:** HUM, LCC, SOCS **ISP:** REL

REL 230 - Judaism and Christian Origins

Course Units: 1.0 We know that Jesus of Nazareth was Jewish, so how is it that Christianity and Judaism became separate religions? This course attempts to answer this question by investigating the nature of the relationship between earliest Christianity and Rabbinic Judaism, drawing out their shared roots in the religion and literature of ancient Israel, and exploring the diverse expressions of second temple Judaism among which the two religious traditions emerged. It also explores their distinctive religious teachings and scriptural interpretations with a particular interest in understanding how and why Christianity and Judaism, despite their commonalities, parted ways and became independent religions. **Cross-Listed:** CLS 230 **CC:** HUM, LCC, WAC **ISP:** REL

Islam

AAH 101 - Islamic Art and Architecture

Course Units: 1.0 A broad and select survey of the art and architecture of Islamic cultures from the 7th through the 16th centuries that will stress the religious, social, economic, and historical contexts within which Islamic arts and architecture developed. We will study a variety of arts in addition to the traditional architecture, painting and sculpture familiar to students in Western art history surveys, including calligraphy and book painting, metalwork, ceramics, glass, carpets and textiles, and gardens and landscape design. **CC:** LCC, HUM **ISP:** AIS, REL

AAH 286 - Art and Religion of the Silk Road

Course Units: 1.0 Central Asia - broadly defined as the area occupied, from East to West, by present-day western China, Mongolia, Russia, Kazakhstan, Kyrgyzstan, northern India, Pakistan, Tajikistan, Afghanistan, Uzbekistan, Turkmenistan, and Iran - has been characterized as both harsh wasteland and cultural crossroads. This course concerns the visual culture of the Silk Road of Central Asia, focusing on the roles visual culture played in establishing modes of religious imagination in medieval culture. **CC:** LCC, HUM **ISP:** AIS, REE, REL

ANT 256 - Anthropology of Islam

Course Units: 1.0 This class provides an anthropological perspective on Islam, one that tries to understand Islam as a living tradition. There are well over a billion Muslims in the world who speak countless languages and reside in dozens of nation-states. The immense diversity of Islamic practice and Muslim life is bewildering and defies any simple generalization. However, this diversity need not blind us to the themes that connect Islam and cut across Muslim life around the world. While not an exhaustive survey of Islamic practice and ways of life, this class focuses on the themes that connect Islam across diverse regions and peoples. These themes include: Islamic authority, conceptions of gender, the importance of Islamic law, and the value of Islamic community. In this class, we look beyond local variation to understand Islam as a living tradition. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AIS, REL

HST 240 - The Crusades: Christianity and Islam in Conflict

Course Units: 1.0 The conquest of Jerusalem and the Holy Land by knights from western Europe and the response of the region's Muslims, 1096-1291. Special attention is given to the development of a crusading spirit and its corruption under the influence of religious, political, and economic expediency and personal greed. **CC:** SOCS **ISP:** REL

HST 302 - Comparing Muslim Cultures

Course Units: 1.0 This course explores the history of Islam in diverse regional and temporal settings. It explores the unity of Islam, through an examination of the early history of the religion and its founding texts and tenets. However, the main emphasis of this course will be Islam's remarkable heterogeneity over time and space; the foci will be case studies drawn from across the Muslim world - in Africa, the Middle East Asia and Europe. Through readings and discussions, the course examines the following ten topics: The foundation of Islam, the expansion of Islam and conversion processes, Muslim travelers and trade, religious tolerance, women and gender in Islam, Islamic Education, religious revivalism and reform, Muslim lands under European colonial rule, Islam in the West, and the challenge of modernity. **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** AFR, REL

HST 401 - Seminar in Africa/Middle East

Course Units: 1.0 **Prerequisite(s):** Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, WAC, WAC-R **ISP:** AFR, REL

PSC 343 - Women and Politics in the Muslim World

Course Units: 1.0 In this course we will study how politics and women intersect across the Muslim world, including the Middle East, Sub-Saharan Africa, Central Asia, and South Asia. Empirically, we will investigate the varied paths women's rights have taken in different national settings while examining similarities and differences in the degree to which women wield social, economic, and political power in their respective countries. We will seek theoretical explanation for women's status in the region, which varies significantly from country to country. Sample topics for discussion include the Koran and women, debates about the veil, honor killings, the impacts of oil, war, and foreign intervention on women's status, and Muslim female prime ministers and presidents. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** GSWS, REL

REL 203 - Judaism/Christianity/Islam: Comparative Perspectives

Course Units: 1.0 This course offers a comparative approach to Judaism, Christianity and Islam, three closely related religious traditions. It attempts to draw out commonalities among and differences between these traditions by focusing on their histories, their understandings of God, revelation and tradition, religion and society, and responses to social and political change. **Cross-Listed:** HST 203 **CC:** HUM, LCC, SOCS **ISP:** REL

Religions of Asia

AAH 286 - Art and Religion of the Silk Road

Course Units: 1.0 Central Asia - broadly defined as the area occupied, from East to West, by present-day western China, Mongolia, Russia, Kazakhstan, Kyrgyzstan, northern India, Pakistan, Tajikistan, Afghanistan, Uzbekistan, Turkmenistan, and Iran - has been characterized as both harsh wasteland and cultural crossroads. This course concerns the visual culture of the Silk Road of Central Asia, focusing on the roles visual culture played in establishing modes of religious imagination in medieval culture. **CC:** LCC, HUM **ISP:** AIS, REE, REL

AMU 125 - World Religions and Music

Course Units: 1.0 Music, deemed by some to be a gift from the Divine, continues to play an important role in the histories of all religions. Through an examination of three religions - Buddhism, Judaism, and Christianity - students will come to an understanding of the intricate relationships among music, theology, liturgy, ritual, and human religious expressions in different cultures and at different time periods. **CC:** HUM, LCC **ISP:** REL

PHL 216 - Introduction to Indian Philosophy

Course Units: 1.0 An introductory survey of Hinduism, Buddhism, Jainism and Carvaka. Over the centuries, Indian philosophers inquired into the nature of reality and mind, debated epistemological issues concerning the criteria for valid knowledge, proposed paths for attaining spiritual liberation, and developed social theories for the welfare of people. Methods used by Indian philosophers include meditation, yoga, reasoning, logic, debate and observation. Some of these methods will be explored in class. **CC:** HUM, LCC **ISP:** REL

PHL 167 - Chinese Philosophy

Course Units: 1.0 An introductory survey of Confucianism, Daoism, Moism, Yin Yang, Legalism, Neo-Confucianism and Neo-Daoism. Among the theories covered in the course are Confucian theories of self-cultivation, the superior person and human nature, Menzi's theory of original human goodness, Xunzi's theory of evil human nature, Daoist theories of non-action, harmony with nature, and law of reversion, and Moist theories of universal love and non-discrimination. Many of these Chinese theories shaped Chinese civilization for over two millennia. **CC:** HUM, LCC **ISP:** REL

PHL 180 - Theories of the Good Life

Course Units: 1.0 This course takes a cross-cultural approach to theories of the good life by studying ancient Greek, Chinese, African and Hindu theories, as well as more modern versions of these theories. In class, we shall analyze and debate these theories in terms of their underlying beliefs about human nature and in terms of whether someone can actually live by these theories. **CC:** HUM, LCC **ISP:** REL

PHL 245 - Buddhist Ethics

Course Units: 1.0 Ethics is one of the three main components of the Buddhist path, the others being meditation and wisdom. In the centuries following the Buddha's death, two main branches of Buddhism developed: Theravada Buddhism and Mahayana Buddhism. The older school, Theravada, emphasized moral guidelines and meditation practices that culminate in nirvana; the Mahayana school emphasized a morality of compassion and a metaphysical theory of emptiness. In the contemporary period, Buddhists are concerned about issues relating to the environment, social justice, war, medicine and health, gender, and race. Buddhist ethical theories emphasize selflessness, moral

discipline, compassion, karma and awareness. This course draws from ancient ethical texts as well as contemporary works on applying basic Buddhist principles to today's moral problems. **CC:** HUM, LCC **ISP:** REL

PHL 338 - Zen and Tibetan Buddhism

Course Units: 1.0 Mahayana Buddhist philosophy explains the nature of reality as emptiness, which means that the nature of reality is beyond (and thus empty of) words, concepts and characteristics. Mahayana Buddhism also regards compassion as the primary motivation for ethics. This course focuses on the metaphysical theories of two schools of Mahayana Buddhist philosophy: Chinese/Japanese Zen Buddhism and Tibetan Buddhism. The course examines Zen Buddhist theories of No-Self and the nature of mind that makes sudden enlightenment possible, as well as Tibetan Buddhist theories of interdependent arising and emptiness. This course is applicable to the Asian Studies and Religious Studies majors. **CC:** HUM, LCC **ISP:** REL

Religions of the Ancient Mediterranean

CLS 110 - Ancient Egypt: History and Religion

Course Units: 1.0 This course offers an overview of the history of ancient Egypt from the rise of the state under the first pharaohs (3200 BC) to its incorporation into the Hellenistic and Roman empires. Attention is given to political and social organization, foreign relations, and religion based on a study of relevant ancient texts (in translation) and archaeological evidence. **CC:** LCC, HUM **ISP:** AFR, REL

CLS 111 - Ancient Iraq: History and Religion

Course Units: 1.0 Ancient Iraq is often termed 'the cradle of civilization' since it is here that agriculture, urbanism, and writing first occurred. This course examines the early history of Iraq (ancient Mesopotamia) from the development of agriculture and permanent settlements through to the establishment of the first cities and states, down to about 1600 BCE. The class examines the social and economic contexts in which early Mesopotamian culture emerged, and it also gives attention to religious and religion-political ideas **Cross-Listed:** REL 111 **CC:** LCC, HUM **ISP:** REL

CLS 132 - Religion in the Pagan World

Course Units: 1.0 An examination of particular cults and the performance of cult in ancient Greek and Roman societies, and consideration of the relationship of the individual and the state to deity in the pre-Christian world. Emphasis on ancient sources. **CC:** LCC, HUM, JCHF **ISP:** REL

CLS 134 - Classical Art and Architecture

Course Units: 1.0 An introductory survey of the arts of Greece and Rome, including painting, sculpture, architecture, and decorative arts. Emphasis will be placed upon learning art historical and archaeological terminology and methods, the place of art and architecture in ancient society and culture, and contacts with other cultures, in addition to becoming familiar with the most important monuments, artists, and patrons. **Cross-Listed:** AAH 110 **CC:** LCC, HUM **ISP:** REL

CLS 143 - Classical Mythology

Course Units: 1.0 Greek and Roman myths, with emphasis on the ancient sources. All readings will be in English. **CC:** LCC, HUL, HUM, JCHF, JLIT **ISP:** REL

CLS 154 - Poetry and the Cosmos

Course Units: 1.0 An examination of Greek and Roman poets' attempts to understand the origin and development of the universe, and of human beings' place in it. Readings (all in English) will include Hesiod, the pre-Socratic philosophers, and Lucretius. **CC:** HUL, LCC, HUM **ISP:** REL

CLS 161 - The Heroic Journey: Survey of Ancient Epic

Course Units: 1.0 An examination of four great epics of classical antiquity: Homer's Iliad and Odyssey, Virgil's Aeneid, and Ovid's Metamorphoses. All readings in English. **CC:** HUL, LCC, HUM

CLS 178 - Ancient World Mythology

Course Units: 1.0 The myths of Greece, Rome, and the Ancient Near East, Egypt, Sumer, Babylonia, India, et al. reveal surprising similarities and startling differences. A comparative approach illuminates the peculiar characteristics of the various traditions. No culture exists in isolation. These societies were all subject to manifold political (and sometimes even violent) "multicultural" pressures. Rome itself, whose poet Ovid composed the "Bible" of the Western mythological tradition, stood at the head of a vast amalgam of peoples from the cold forests of Northern Europe across the god-infested lands of Greece to the ancient sands of Egypt and beyond. Everywhere we look we will find the interactions and conflicts of differing peoples, traditions, gods. We will listen to their sacred stories, their myths, and, through active comparison and investigation, strive to gain a general overview of the facts, a general understanding of their differing religious conceptions, and perhaps, we may hope, a glimpse into their ancient wisdom. The course will cover broad mythical themes: creation, gods, the underworld, and heroes. Other topics will include the nature of sacrifice and ritual, ancestor-worship, the afterlife, divine kingship, the role of myth in political propaganda, the role of politics and religion in myth, gender issues, and related themes. Given the vast range of the material, our journey will of necessity be selective. Lectures will range, for example, from general presentations of one cultural system to detailed examination of one particular type of god across several cultures. Although much of the focus will be on the ancient myths of Greece, Rome, Egypt, the Near East, and India, we will examine some (relatively) more recent myths from Africa and the Americas as well. **CC:** LCC, HUM, JCHF, JLIT **ISP:** REL

HST 195 - From Abraham to Mohamed and Beyond: The Early History of the Jews

Course Units: 1.0 History of the Jewish people in its first 1600 years from tribal beginnings to the destruction of the second Commonwealth. **CC:** SOCS **ISP:** REL

REL 230 - Judaism and Christian Origins

Course Units: 1.0 We know that Jesus of Nazareth was Jewish, so how is it that Christianity and Judaism became separate religions? This course attempts to answer this question by investigating the nature of the relationship between earliest Christianity and Rabbinic Judaism, drawing out their shared roots in the religion and literature of ancient Israel, and exploring the diverse expressions of second temple Judaism among which the two religious traditions emerged. It also explores their distinctive religious teachings and scriptural interpretations with a particular interest in understanding how and why Christianity and Judaism, despite their commonalities, parted ways and became independent religions. **Cross-Listed:** CLS 230 **CC:** HUM, LCC, WAC **ISP:** REL

Religion, Culture and Society

AMU 125 - World Religions and Music

Course Units: 1.0 Music, deemed by some to be a gift from the Divine, continues to play an important role in the histories of all religions. Through an examination of three religions - Buddhism, Judaism, and Christianity - students will come to an understanding of the intricate relationships among music, theology, liturgy, ritual, and human religious expressions in different cultures and at different time periods. **CC:** HUM, LCC **ISP:** REL

ANT 252 - Anthropology of Christianity

Course Units: 1.0 Although Christianity has its historical roots in the Mediterranean world, during its 2000 year history it has migrated to almost every geographical area of the globe giving rise to many vibrant local Christianities with distinct and culturally specific identities. While many people associate contemporary Christianity with Euro-Americans, scholars point to Christian churches dating from the 5th century in North Africa and in India. Scholars argue that the demographic center of Christianity has already shifted to the Global south. This course investigates the ways Christianity has been shaped by contact with different world cultures and the social processes and religious changes implicit in the acculturation of Christianity in diverse geographical regions and cultural contexts. Questions addresses will include: i) how has Christianity been localized in various areas of the world?; ii) what is the appeal to Pentecostalism in the global south? Is it a conservative force directing attention away from social inequalities or does it challenge social inequalities? iii) what kinds of transnational networks are formed by contemporary Christians and how do these shape new kinds of identities?; iv) what is the appeal of apparently patriarchal and conservative forms of Christianity to women, who form the majority of Christians in most areas? **CC:** LCC, SOCS **ISP:** REL

ANT 254 - Anthropology of Religion

Course Units: 1.0 Comparative study of religious behavior and ideology. Examines the ways that a wide array of religions help individuals to cope with life problems and reinforce social groups. Examines debates about the extent to which religion shapes human motivation and about the relationship between religion and society. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** REL

HST 141 - The Bright Ages: Medieval Europe from c. 500 CE to c. 1450 CE

Course Units: 1.0 In the popular imagination, the medieval history of Europe often appears as a narrative of decline ("Fall of Rome") and darkness(Dark Ages) followed by gradual betterment (Renaissance) and progress (Scientific Revolution, Enlightenment, Democracy). This class provides you with the critical and analytical tools to understand why this particular vision of medieval Europe came into being and how to develop a historical understanding of the past, present, and future. We begin our semester at the fringes of Europe, in fifth-century norther Africa, after the sack of Rome in 410 where we analyze Augustine's sermons and his use of the olive press as a metaphor for the sack. Who were the first monks and saints in Late Antiquity and why would anyone convert to Christianity? In the seventh century, you may be astonished to learn that women had significant power as queens, positions they could and would have maintained throughout the medieval period. In the eleventh- to thirteenth centuries, Mediterranean traders moved goods across the seas at the same time as wars - most famously the Crusades - were fought inside and outside Europe. Francis of Assisi, however, took a vow of poverty and become the leader of a movement that offered a serious alternative to what we call capitalism today. Why did society go for one and not the other alternative? We will then study the lives of slaves, farmers, mystics, and a businesswoman. How did they shape medieval European history? Toward the end of the semester, we will take a "reflective break" with Norbert Elias to ask what European civilization is and what Elias understood by the Civilizing Process. He will provide us with the analytical tool historicize the very notion of civilization. We leave the medieval world with Christine de Pizan who built the City of Ladies (1405) and with the Portuguese who began to conquer the Indies and Americas by the mid fifteenth century. In this class, alongside acquiring research and writing skills that are valuable in almost all areas of intellectual endeavor, you will be introduced to the most important events and narratives of medieval European history. Because medieval history is both excitingly different from our present but also often similar, studying this history is also a unique challenging and excellent exercise in abstract and critical thought. **CC:** SOCS **ISP:** REL

HST 372 - Sex, Race and Gender in Latin America

Course Units: 1.0 This course examines the history of the intersection of race, sex and gender in Latin America from the pre-colonial period to the present, especially as evidenced in the changing status of women and the patriarchal order. This history traces the effect of broader societal transformations such as colonialism, imperialism, and economic and political developments on the gender division of labor and the construction of class, race and national identity.

Prerequisite(s): Any 100-level or 200-level history course or permission of the instructor. **CC:** LCC, SOCS **ISP:** GSWS, LAS, REL

MLT 284 - Popular Religion and Politics in Latin America

Course Units: 1.0 In this course we will examine the connection between politics and popular religions in Latin America, taking a critical view of several of their manifestations without losing track of the language and "sciences" historically used to describe them. We will engage biblical, anthropological, videographic, ethnohistorical and cultural theory texts as well as oral histories and collective memories. The final goal is to tease out those ideas that have traditionally defined the terms in which we understand and explain the "popular" in religious behavior; to understand better the conflicted relationship between "popular" cultural and institutional spaces; and finally to understand why the evolution of popular religions in Latin America cannot be examined without also taking into account their political economy. **CC:** HUM, LCC **ISP:** AFR, LAS, REL

PHL 180 - Theories of the Good Life

Course Units: 1.0 This course takes a cross-cultural approach to theories of the good life by studying ancient Greek, Chinese, African and Hindu theories, as well as more modern versions of these theories. In class, we shall analyze and debate these theories in terms of their underlying beliefs about human nature and in terms of whether someone can actually live by these theories. **CC:** HUM, LCC **ISP:** REL

PSC 343 - Women and Politics in the Muslim World

Course Units: 1.0 In this course we will study how politics and women intersect across the Muslim world, including the Middle East, Sub-Saharan Africa, Central Asia, and South Asia. Empirically, we will investigate the varied paths women's rights have taken in different national settings while examining similarities and differences in the degree to which women wield social, economic, and political power in their respective countries. We will seek theoretical explanation for women's status in the region, which varies significantly from country to country. Sample topics for discussion include the Koran and women, debates about the veil, honor killings, the impacts of oil, war, and foreign intervention on women's status, and Muslim female prime ministers and presidents. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** GSWS, REL

REL 170 - Myth, Ritual and Magic

Course Units: 1.0 This course examines some of the theoretical issues surrounding myth, ritual and magic as well as specific examples of their cultural expression. How do people make sense of themselves, their society and the world through myth and ritual? How do cosmology and belief systems help them gain and organize knowledge about the world and themselves? The course will be examining a number of "occult" and "esoteric" practices, that is, practices that were not commonly known to all members of society, including Sufism, kabbalah, alchemy, and shamanism. **Cross-Listed:** ANT 170 **CC:** HUM, LCC **ISP:** REE, REL **Note:** Electives (only one cross-listed course can count for the major or minor)

REL 203 - Judaism/Christianity/Islam: Comparative Perspectives

Course Units: 1.0 This course offers a comparative approach to Judaism, Christianity and Islam, three closely related religious traditions. It attempts to draw out commonalities among and differences between these traditions by focusing on their histories, their understandings of God, revelation and tradition, religion and society, and responses to social and political change. **Cross-Listed:** HST 203 **CC:** HUM, LCC, SOCS **ISP:** REL

REL 271 - Religion and Food

Course Units: 1.0 Why do we eat the things we eat in the way we eat them? Used in religious rituals, food can become a potent symbolic expression of people's relationships to one another, the world, and to the Ultimate. Historically, food has been an integral part of religious activity through practices such as preparation, consumption, and fasting. In order to understand these practices better, the course begins with a brief exploration of how food functions in culture generally to create and sustain meaning. The bulk of the course investigates the place of food in the rituals and beliefs of four of the world's great religious traditions: Judaism, Islam Hinduism and Christianity. The course also examines the phenomena of over- and under-eating in light of the importance given to feasting and fasting in these religious traditions. **CC:** HUM, LCC **ISP:** LAW, REL

REL 280 - Religion and Science

Course Units: 1.0 This course explores the historical and contemporary relations between several of the world's major religions and the natural sciences. The presently pervasive "conflict" view is examined, along with alternative views. The course assumes no background in science beyond high school, nor adherence to any particular religious tradition. **CC:** HUM **ISP:** REL

SOC 223 - Sociology of Religion

Course Units: 1.0 The role of religion and religious phenomena from an institutional, organizational, and individual perspective in contemporary and historical context, exploring the interplay between the public and private spheres. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS, REL

Russian and East European Studies

Director: Associate Professor K. Bidoshi (Modern Languages and Literatures)

This program provides a broad, area-oriented liberal arts education focusing on the languages, cultures, and social systems of Russia and Eastern Europe. It leads to a degree of Bachelor of Arts and is designed primarily for those seeking careers in government service, journalism, law, or business.

Russian and East European Studies Approved Courses

Anthropology

ANT 170 - Myth, Ritual and Magic

Course Units: 1.0 This course examines some of the theoretical issues surrounding myth, ritual and magic as well as specific examples of their cultural expression. How do people make sense of themselves, their society and the world through myth and ritual? How do cosmology and belief systems help them gain and organize knowledge about the world and themselves? The course will be examining a number of "occult" and "esoteric" practices, that is, practices that were not commonly known to all members of society, including sufism, kabbalah, alchemy, and shamanism. **Cross-Listed:** REL 170 **CC:** LCC, HUM, SOCS **ISP:** REE

ANT 243 - Anthropology and International Development

Course Units: 1.0 Faith in twentieth-century development and progress has been severely shaken by the environmental crisis and the failures of the international development assistance. What is development? What is the third world? How was it made? What problems does it face and how is it changing? What are the causes of failure in development / aid programs? Drawing on a variety of ethnographic materials and case studies, this course discusses the nature of

economic and social changes in post colonial societies and underdeveloped areas in the West / North, offers a critical analysis of sustainable development, and introduces the students to the practices, anthropological and otherwise, of planning policy interventions. The course shows how anthropological knowledge and understanding can illuminate "development issues" such as rural poverty, environmental degradation and the globalization of trade. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** AIS, REE

ANT 246 - Anthropology of Human Rights

Course Units: 1.0 In recent years, anthropological discussions of human rights have gone beyond the traditional debate between universalism and relativism sparked by the 1948 Universal Declaration of Human Rights. Marginalized peoples who are the traditional subjects of anthropological research are increasingly using human rights rhetoric to advance their own causes or draw attention to their plight. This course will examine philosophical and anthropological discussions of human rights and contemporary debates and controversies surrounding human rights. In particular, we will examine the deployment of truth commissions in the aftermath of political violence, the role of human rights NGOs, contested claims of suffering, and human rights interventions. **CC:** SOCS, LCC, GCHF, GSPE **ISP:** LAW, REE

ANT 274 - Mapping Musical Lives: Ethnography of Performing Arts

Course Units: 1.0 This seminar explores the relationship between music and culture through live performance, discussion, video and audio, and workshops in a variety of world music areas. Students will also consider how one conducts research on performing arts, culminating in a focused project on music-making in the community. Students thus will encounter diverse peoples and their musical practices in cross-cultural comparison while also exploring research methodology through their own work. **Cross-Listed:** AMU 220 **Prerequisite(s):** AMU 101 , AMU 120 / ANT 148 , or permission of the instructor. **CC:** LCC, HUM, SOCS, JCHF, JSPE, WAC-R **ISP:** REE

Art History

AAH 286 - Art and Religion of the Silk Road

Course Units: 1.0 Central Asia - broadly defined as the area occupied, from East to West, by present-day western China, Mongolia, Russia, Kazakhstan, Kyrgyzstan, northern India, Pakistan, Tajikistan, Afghanistan, Uzbekistan, Turkmenistan, and Iran - has been characterized as both harsh wasteland and cultural crossroads. This course concerns the visual culture of the Silk Road of Central Asia, focusing on the roles visual culture played in establishing modes of religious imagination in medieval culture. **CC:** LCC, HUM **ISP:** AIS, REE, REL

AAH 340 - European Modern Art, 1880-1940

Course Units: 1.0 Major developments in modernism primarily in Europe. Traces the emergence of modernist visual vocabularies in painting, graphic arts, photography, sculpture, architecture, and "decorative arts" ranging from ranging from Van Gogh's post-impressionism, through the cubist art of Picasso and Dali's dream-like surrealism. Topics include the transformations of traditional modes of art making, the proliferation of movements and "-isms," the political functions of art and exhibitions, film as an art, and the rise of abstraction. Visual and textual analysis. **Prerequisite(s):** At least one art history course, or permission of the instructor. **CC:** HUM, LCC, WAC/S **ISP:** REE

Dance

ADA 153 - Histoire de la danse, Danse de l'histoire/History of Dance, Dance of History

Course Units: 1.0 Examination of Western European dance and dance texts as revelatory of broader historical and cultural patterns, with special analyses of dance as a key tool of nation building (as with the court of Louis XIV) and/or a central medium of artistic creation (as in 1920's Paris). Primary focus on France as creator, user, and potential abuser of dance's power, but some attention given other European models (Berlin, St. Petersburg, London). Readings from theoreticians, historians, and dance litterateurs (Moliere, Gautier, Cocteau). **Cross-Listed:** FRN 421 and MLT 211 **CC:** HUL, LCC **ISP:** REE

Economics

ECO 354 - International Economics

Course Units: 1.0 Foreign trade and international finance, protectionism, international migration of capital and labor, political economy of trade policy, strategic trade policy, industrial policy, geo-economic and geopolitical issues. **Prerequisite(s):** ECO 241 , ECO 242 , and ECO 243 **CC:** LCC, SOCS **ISP:** AIS, REE

ECO 376 - Seminar in Global Economic Issues

Course Units: 1.0 This seminar explores different perspectives on current global economic issues. A review of the recent debate on globalization provides a framework for discussion of a variety of issues related to international trade and the international financial system. Topics covered may include: international trade and the environment, international trade and labor standards, regionalism vs. world trade, international financial crises, reforming the global financial architecture, and international capital flows and developing countries. **Prerequisite(s):** ECO 241 , ECO 242 and ECO 243 **CC:** SOCS, WAC-R **ISP:** AIS, LAS, REE

ECO 383 - Seminar in International Finance

Course Units: 1.0 This course is about the financial markets that facilitate trade and investment in today's global economy. We will learn about the balance of payments, exchange rate determination and exchange rate regimes. Emphasis in the course will be placed on understanding the events currently happening around us: including the widening U.S. current account deficit, dollar depreciation against the euro, China's reluctance to float its exchange rate, and the financial crises in Asia and Argentina. **Prerequisite(s):** ECO 241 and ECO 242 **CC:** SOCS, WAC-R **ISP:** REE

English

EGL 247 - Studies in Modern Poets: Bob Dylan and Gary Snyder

Course Units: 1.0 This course is a study in the role of history in the ways that two poets, Bob Dylan and Gary Snyder, conceive of their work. Dylan's fascination with the music and history of America from the run-up to the Civil War through Reconstruction and the Great Depression, shapes his sense of useful subject matter, his development of the personae that inhabit his lyrics, and his range of rhetoric, from the nostalgic to the prophetic; it also places him squarely within contemporary controversies about the political uses of history. Gary Snyder's understanding that history extends to the natural world and our relationship to it is integral to his complex enterprise as a writer of poems and essays, as an activist and educator, and as a point of connection in a web of similarly concerned thinkers. His conception of history as a matter of bioregions rather than of nations and of tradition as a matter of wisdom rather than of identity unsettles the usual divisions between art, politics and science as well as our conventional expectations of poetry. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD, JLIT **ISP:** AMS, REE

EGL 250 - The Beats and Contemporary Culture

Course Units: 1.0 An examination of the writers of the Beat Generation (including Allen Ginsberg, Jack Kerouac, Gary Snyder, Edward Sanders) and of their lasting influence on American popular culture. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, GLIT, GCAD **ISP:** AMS, GSWS, REE

EGL 262 - Global Modernisms

Course Units: 1.0

While traditionally modernism has been considered a largely European and North American affair, in recent years scholars have sought to contest and expand this canon. New research has shown that modernism existed all over the world, from Africa and Latin America, to the South Pacific and East Asia, and on all continents in between. This course introduces students to a new globally expanded understanding of modernism, while asking them to actively contribute to the ongoing expansion of the canon. We will work with new scholarship and archival materials, in order to better understand what happens to modernism as it spreads around the world.
Writers may include African writers such as Léopold Sédar Senghor, and Wole Soyinka; Caribbean writers Claude McKay and Aimé Césaire; Japanese poets, Hirato Renkichi and Chika Sagawa; Chinese writers such as Lu Xun and Eileen Zhang; Indian writers from Tagore and the Indian Progressive Writers Association to the 1960s avant-gardes; and Turkish modernists including Ahmet Hamdi Tanpınar and the Garip poets.

Students will have the opportunity to work with texts in any languages they may read, or to work exclusively in English (including in translation). By exploring literary criticism on modernism in its historical and global contexts, students will gain an understanding of major debates which have shaped modernist studies across the twentieth century including New Criticism, feminist studies, postcolonial studies, as well as more recent debates on the global turn including weak theory and "bad" modernisms. Students will also improve their writing and independent research skills through an anthology project that invites them to contribute to the ongoing canonization of global modernist texts through producing scholarly annotations, introductions, and digital editing. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, LCC, WAC, GLIT, GCHF, GSPE **ISP:** AIS

EGL 277 - Philosophical Fiction

Course Units: 1.0 This course will deal with works of fiction in which philosophy or philosophical concepts play a significant role. A key issue is the relationship between ideas and (literary) form. Authors will come from a wide range of traditions and may include Descartes, Rousseau, Wordsworth, Nietzsche, Camus, Dostoevsky, Borges, Calvino, Lem, and Le Guin. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** REE

History

HST 105 - Comparative Global History to 1800

Course Units: 1.0 Provides a "bird's-eye" view of human history from the emergence of human "civilization" in the Fertile Crescent to the European conquest of the Americas. Surveys the comparative development of the world's continents, regions, and empires and investigates how expansion of the "human web" facilitated both cooperation and conflict among the world's peoples. Pays particular attention to environmental and ecological determinism, the influence of technology on economic growth, the rise of "portable" religions, and the interaction of culture and politics. **CC:** LCC, SOCS **ISP:** REE

HST 106 - Comparative Global History from 1800

Course Units: 1.0 This course examines the broad themes in world history from the 19th century onwards, beginning with the rise of the nation-state and the expansion of European and subsequently Japanese imperialism. It looks at the indigenous and global response to colonialism, the impulse of nationalism and the quest for modernity, as well as how race and gender came to be rethought and reconfigured going into the 20th century. We will examine the impact of the two world wars, the process of decolonization, the Cold War and the rise of globalization in the late 20th century. **CC:** SOCS **ISP:** REE

HST 123 - Postwar America and the Origins of the Cold War

Course Units: 1.0 The stand-off between the United States and the Soviet Union permeated the politics and culture of the United States from the end of the Second World War through the early 1960s. This course will explore the origins of the Cold War, the terms on which it was fought, and the degree to which it imposed a political and cultural "consensus" on the United States. **CC:** SOCS **ISP:** AMS, REE

HST 147 - Revolutionary History

Course Units: 1.0 This course will survey major themes in modern European history, including: the Enlightenment and the Industrial Revolution; the French Revolution; the Russian Revolution and Soviet Communism; and the National Socialist Revolution, World War II, and the Holocaust. **CC:** SOCS **ISP:** REE

HST 149 - The Second World War Era

Course Units: 1.0 Authoritarian movements in Europe and Asia during the Depression decade, the origins of World War II, the alliance against the Axis, the consequences of the war, and the emergence of new social and political structures during the postwar era. **CC:** SOCS **ISP:** REE

HST 152 - The Great War

Course Units: 1.0 This course will cover World War I, at the time called the "Great War," beginning before 1914 with the run-up to war and ending after the war, including the postwar settlement, the early period of the Russian Revolution, and the origins of fascism in Italy and Germany. This is an international history, including the conflict on the western and eastern fronts as well as conditions on the home fronts of the various countries. The course lectures and readings will be accompanied by several films. **CC:** SOCS **ISP:** REE

HST 154 - Russia in the Imperial Age

Course Units: 1.0 Major institutional and ideological developments from the time of the first Romanov to the February Revolution of 1917. **CC:** SOCS **ISP:** REE

HST 155 - From Lenin to Putin: The Rise and Fall of the Soviet Union and the Emergence of Russia

Course Units: 1.0 Russia on the eve of the Revolution. Political, economic, and social developments during the periods of revolution, war, communism, NEP, rapid industrialization, and the postwar years, including the post-Soviet period. **CC:** SOCS **ISP:** REE

HST 156 - History of Poland

Course Units: 1.0 A history of Poland from the formation of the first Polish state to the present. Poland under foreign occupation, independent Poland, communist, and post communist Poland are the focal points in this course. **CC:** SOCS **ISP:** REE

HST 157 - Modern Jewish History

Course Units: 1.0 European, American & Middle Eastern Jewish communities from the fifteenth century, their origins and function within Christian Europe; response of the European Jewry to the Enlightenment and the growth of anti-Semitism and Zionism. **CC:** SOCS **ISP:** REE, REL

HST 158 - The Holocaust

Course Units: 1.0 European and American Jewry in the period 1933- 1945, focusing on modern anti-Semitism, the Nazi world view, German extermination policies, the response of Europe and the United States, and Jewish behavior in a time of crisis. **CC:** SOCS **ISP:** REE, REL

HST 256 - Modern European Ideas

Course Units: 1.0 This course will survey important ideas in modern European history, including the writings of Jean Jacques Rousseau, Voltaire, Montesquieu, Adam Smith, Karl Marx, Charles Darwin, Friedrich Nietzsche, Sigmund Freud, Albert Einstein, Jean-Paul Sartre, Simone de Beauvoir, and Michel Foucault. **CC:** SOCS, WAC, JCHF **ISP:** REE, STS

HST 282 - The Mongols: Terror, Trade and Tolerance

Course Units: 1.0 This course explores the rise, fall, and memory of the great Mongol empire. Students will read not only about the Mongols themselves, but also about the many cultures and countries that the Mongols conquered, and we will analyze those fraught cross-cultural encounters through primary and secondary source materials. We will also look at how the overwhelmingly negative portrayal of the Mongols has evolved over time, and students will look at the way Genghis Khan is depicted in films and monuments. **CC:** LCC, SOCS **ISP:** AIS, REE

Modern Languages in Translation

MLT 230 - Madness and The Mad in Russian Culture

Course Units: 1.0 In this course we will investigate illness and its various representations in 19th and 20th century Russian culture. Specific emphasis will be placed on madness, disease and death in our discussion of various literary and historical madmen. The course will be conducted as a combination of lectures and class discussion. An occasional film will be shown. **Cross-Listed:** RUS 330 **CC:** HUL, HUM, LCC, WAC **ISP:** REE

MLT 260 - The Vampire as Other in East European and American Culture

Course Units: 1.0 We will discuss the present distribution of the East European peoples, their prehistory, and their relation to other peoples of Europe and Asia. We will also survey their early culture, including pagan, animistic, and dualistic religious beliefs, and Christianization. Our focus will be the myth of the vampire, which has had enduring power not only in Eastern European folk belief but also in American popular culture right up to the present day. **CC:** HUL, HUM, LCC, JCHF, JLIT **ISP:** FLM, REE

MLT 262 - Russia: Magnificence, Mayhem, and Mafia

Course Units: 1.0 Through analysis of literature, film, and visual arts we will discuss the Russian impact on the world with all its manifestations, constructive and destructive, and we will also attempt to "imagine" Russia in the future. Do you want to know more about Dostoevsky, communist and post-communist Russia, and, most importantly, the Russian Mafia? **CC:** HUL, HUM, LCC **ISP:** REE

MLT 265 - Soviet and Russian Film Revolutions: Political, Social, Cultural

Course Units: 1.0 At its inception, Soviet film was intertwined with political revolution. In masterpieces such as Eisenstein's The Battleship Potemkin and Pudovkin's Mother, film directors sought to portray the Bolshevik take-over as a legitimate and inevitable response to oppression. Who could imagine that the same country would produce Little Vera, a film about the sexual revolution of the 1980's or Brother, a hero-story about assassins? This course will follow the trajectory of Soviet and Russian cinema from the 1917 Revolution to the present day, as it was used to chronicle social and cultural upheavals. **CC:** HUM, LCC **ISP:** FLM, REE

Music

AMU 161 - From Beethoven to Bernstein

Course Units: 1.0 A study of compositions from the end of the eighteenth century through the present. A few of the composers we study are Beethoven, Chopin, Mendelssohn, Schubert, Clara and Robert Schumann, Wagner, Brahms, Debussy, Stravinsky, Schoenberg, Ives, Copland, Varese, Bernstein, and John Adams. This course is not intended for music majors. **CC:** HUM, WAC, JCAD, JCHF, JLIT, WAC **ISP:** REE

AMU 214 - Romanticism

Course Units: 1.0 The nineteenth century witnessed the development of countless individual musical styles, as opposed to the more homogeneous sounds of previous generations. Through listening exercises, studies of texts and music, and historical documents, students learn to distinguish characteristics of music written by composers such as Chopin, Schubert, Clara and Robert Schumann, Felix and Fanny Mendelssohn, Bizet, Verdi, Wagner, Brahms, Ethel Smythe, Amy Beach, Coleridge-Taylor, Gottschalk, and others. **CC:** HUL, JCAD, JCHF, WAC **ISP:** REE

AMU 215 - Music in the 20th & 21st Centuries

Course Units: 1.0 The study of significant styles and developments in the music of the last hundred years (both "classical" and popular), approached through analysis, performance, and composition. **Prerequisite(s):** AMU 101or permission of the instructor. **CC:** HUM **ISP:** REE

AMU 220 - Mapping Musical Lives: Ethnography of Performing Arts

Course Units: 1.0 This seminar explores the relationship between music and culture through live performance, discussion, video and audio, and workshops in a variety of world music areas. Students will also consider how one conducts research on performing arts, culminating in a focused project on music-making in the community. Students thus will encounter diverse peoples and their musical practices in cross-cultural comparison while also exploring research methodology through their own work. **Cross-Listed:** ANT 274 **CC:** LCC, HUM, JCHF, JSPE, WAC-R **ISP:** REE

Political Science

PSC 112 - Introduction to Global Politics

Course Units: 1.0 An overview of 21st century dynamics that shape national politics in different regional settings, the behavior of states in the world arena, and how global actors impact each other. Depending on the instructor, topics to be explored could include war, terrorism, political economy, historical perspectives, cultural tensions, nation-building and development, imperialism, democracy, balance of power, human rights, emerging institutions, and the world's ecology. In all sections, attention will be paid to the development of political arguments, the critical use of concepts and theories, and strategies of making judgments about globalization and about the impact of international affairs on domestic politics and vice-versa. **CC:** SOCS, GCHF, GSPE **ISP:** REE

PSC 240 - Comparative Ethnic and Racial Politics

Course Units: 1.0 An introduction to the trends and patterns of ethnic conflicts in the contemporary world. Issues pertaining to the rise of nations; theories of ethnic mobilization; the attempt to build general, cross-national explanations; and current efforts to solve ethnic conflict. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS **ISP:** AMS, REE

PSC 248 - The Politics of the New Europe

Course Units: 1.0 A survey of contemporary European politics including topics such as the emerging European Union, the rise of right-wing movements, growing regional and sectional conflict, patterns of immigration, and debate about the very meaning of "Europe." **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** REE

PSC 252 - Global Value Chains

Course Units: 1.0 This course examines the intertwining of power, politics and markets that undergird the production and consumption of everyday consumer goods, from coffee to cars to iPhones. It examines the primary countries where these goods are produced, their differing labor regimes, the international agreements regulating them, the transnational corporations which coordinate the chain of production and consumption, how goods are globally traded and the relative winners and losers these linkages create, usually between developing and developed countries. Each product also corresponds with an underlying theoretical topic, such as natural resources and the global commons or heavy industrialization and industrial policy. The course will introduce some basic conceptual building blocks which will help us organize the extraordinary variety of places, production processes, policies and populations engaged in global value chains. But, we will spend most of the course examining one commodity or product at a time, using what we learn along the way to build an increasingly sophisticated understanding of global production and exchange. Finally, for a final project, students will conduct research on their own product of choice and explore a theoretically important concept associated with it. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** LCC, SOCS, GSPE **ISP:** REE

PSC 258 - Strategies of WWII

Course Units: 1.0 This course will examine the interplay between military and political strategies that shaped the course of World War II, with special attention to the European Theater. It is designed to illustrate the nature of strategic thinking, its relationship to tactical thinking, and its real-world constraints. Special attention will be given to the British decision to continue fighting after the French surrender, the Battle of Britain, Hitler's decision to invade Russia, the allied decision to invade North Africa, and the planning for Normandy. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS, WAC **ISP:** REE

PSC 270 - CIA and the Art of Intelligence

Course Units: 1.0 Provides an historical background to intelligence and espionage, and offers perspectives on present day secret intelligence operations of world powers in support of their national security objectives. Discussions on intelligence analysis, evaluation, human and technical intelligence, cryptography, counter-intelligence, moles, various

kinds of overt operations, US foreign policy issues and goals. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, REE

PSC 334 - Contemporary Continental Theory

Course Units: 1.0 In the latter half of the twentieth century, theorists working in the continental tradition have developed new approaches to modern political concerns about the power of the state, the possibility of democracy, the importance of language, media and rhetoric, and the connections between knowledge, ethics, religion and politics. Students in this course will grapple with some of the most important figures and theories at the leading edge of this tradition. While this course presumes no background in continental theory, students must be prepared to wrestle with difficult texts, ideas and thinkers. Authors may include: Agamben, Badiou, Butler, Cavarero, Cavell, Deleuze, Derrida, Fanon, Foucault, Ranciere, Zizek. **CC:** SOCS, WAC, WAC-R **ISP:** REE

PSC 347 - Comparative Left Politics

Course Units: 1.0 A critical exploration of Marxian ideas and a comparative examination of how those ideas were, and are, translated into political practice. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** REE

PSC 350 - Theories of International Politics

Course Units: 1.0 In-depth investigation and evaluation of the major perspectives on world politics. Mainstream theories will be compared and contrasted to critical/alternative paradigms. Special attention is given to modes of theory evaluation. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** REE

PSC 351 - Global Organized Crime

Course Units: 1.0 This course will focus on the emergence of new transnational criminal networks in the age of globalization, and the sources and patterns of political corruption in a comparative perspective. Specific issues to be explored include: trafficking zones, weak states, economic underdevelopment, the western consumer demand for illegal commodities, international anti-corruption discourse, US drug policy, comparative analysis of mafia organizations, and how private money corrupts democracies. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** REE

PSC 358 - Wealth and Power Among Nations

Course Units: 1.0 An examination of the tensions between developed and developing countries in the global political economy. First, the course traces the genealogy of thinkers on the issues of development, such as Smith, Marx, Keynes, modernization theory and development economics, as a way to understand the enduring debates within the field. Second, it examines historical transformations in the international economy, such as in trade, global finance and economic crises, in order to understand how the structures and opportunities for developing countries have transformed over time. Finally, although there is no focus on any single region of the world, the course touches upon the oil boom in the Middle East in the 1970s, the debt crises in Latin America and Africa in the 1980s, the rise of Japan and the East Asia tigers, the fall of the Soviet Union and Eastern bloc countries in the 1990s, the new giants of China and India, new forms of post-Fordist production, and the relationship between production and identity. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS **ISP:** LAS, REE

PSC 359 - Seminar: International Politics

Course Units: 1.0 Selected topics in international politics. Content will vary from year to year. Preference to sophomore and junior political science majors. **Prerequisite(s):** PSC 111 or PSC 112 or PSC 113 or sophomore standing. **CC:** SOCS, WAC **ISP:** REE

Religious Studies

REL 170 - Myth, Ritual and Magic

Course Units: 1.0 This course examines some of the theoretical issues surrounding myth, ritual and magic as well as specific examples of their cultural expression. How do people make sense of themselves, their society and the world through myth and ritual? How do cosmology and belief systems help them gain and organize knowledge about the world and themselves? The course will be examining a number of "occult" and "esoteric" practices, that is, practices that were not commonly known to all members of society, including Sufism, kabbalah, alchemy, and shamanism. **Cross-Listed:** ANT 170 **CC:** HUM, LCC **ISP:** REE, REL **Note:** Electives (only one cross-listed course can count for the major or minor)

Russian

RUS 100 - Basic Russian 1

Course Units: 1.0 For students with no knowledge of Russian. An introduction to the language, with emphasis on oral skills and communicative proficiency. Contact the Russian professor if you have experience in the language. **CC:** HUM, JWOL **ISP:** REE

RUS 101 - Basic Russian 2

Course Units: 1.0 Continuation of RUS 100 **Prerequisite(s):** RUS 100 or two years of high school Russian. **CC:** LCCR, HUM, GWOL **ISP:** REE

RUS 102 - Basic Russian 3

Course Units: 1.0 A continuation of RUS 101 , with increasing attention paid to reading simple, every day texts. **Prerequisite(s):** RUS 101 or equivalent. **CC:** LCCR, HUM **ISP:** REE

RUS 200 - Intermediate Russian 1

Course Units: 1.0 Intensive development of the four proficiency skills (speaking, listening, reading, writing) with continued emphasis on strategies of basic conversation. **Prerequisite(s):** RUS 102 or equivalent. **CC:** LCCR, HUM **ISP:** REE

RUS 201 - Intermediate Russian 2

Course Units: 1.0 Continuation of RUS 200 **Prerequisite(s):** RUS 200 or equivalent. **CC:** LCCR, HUM **ISP:** REE

RUS 202 - Advanced Russian

Course Units: 1.0 Development of skills and vocabulary necessary to deal with conversation about and texts on Russian cultural life. Basic grammar review. **Prerequisite(s):** RUS 201 or equivalent. **CC:** HUM, LCCR **ISP:** REE

RUS 230 - Contemporary Russian Culture

Course Units: 1.0 A course that combines expanding oral, aural, and written skills with an introduction to contemporary issues in Russian culture and political life. **Prerequisite(s):** RUS 202 or instructor's permission. **CC:** LCCR, HUM **ISP:** REE

RUS 300 - Survey of Russian Literature 1: From Pushkin to Revolution

Course Units: 1.0 Readings that begin with the godfather of Russian literary life, Aleksander Pushkin, and that ends on the eve of the October revolution. Continued attention to development of vocabulary and oral presentation. **Prerequisite(s):** RUS 202 or instructor's permission. **CC:** HUM, LCCR **ISP:** REE

RUS 301 - Survey of Russian Literature 2: From Revolution to Present

Course Units: 1.0 Readings ranging from the great revolutionary writers (Mayokovsky, Babel, Platonov, etc.) to contemporary writers of interest. **Prerequisite(s):** RUS 300 **CC:** HUL, LCCR **ISP:** REE

RUS 302 - The Russian Short Story: Pathologies of the Everyday

Course Units: 1.0 A survey of Russian short prose, with emphasis on its reflected/distorted images of Russian everyday life. Includes Gogol, Tolstoy, Gorky, Kharms, Petrushevskaia, and others. **CC:** HUL, LCCR **ISP:** REE

RUS 330 - Madness and The Mad in Russian Culture

Course Units: 1.0 In this course we will investigate illness and its various representations in 19th and 20th century Russian culture. Specific emphasis will be placed on madness, disease and death in our discussion of various literary and historical madmen. The course will be conducted as a combination of lectures and class discussion. An occasional film will be shown. **Cross-Listed:** MLT 230 **CC:** HUL, HUM, LCCR, WAC **ISP:** REE

Russian and East European Studies, B.A.

Requirements for the Major:

Twelve courses including REE 498-499; three courses above RUS 101; two courses on the literature or culture of the country in question; and five appropriate courses from anthropology, art history, economics, history, music, political science and religious studies. Students must enter the major by the fall of their junior year, and course selections must be approved by the REE director. Majors must have completed at least three courses in the department most directly related to their senior project and must pass a comprehensive examination in the form of an oral defense of their senior project.

Science, Technology, and Society

Director: Professor A. Burkett (English)

Science, medicine, and technology all play important roles in modern society. Several different populations of students would be interested in studying Science, Technology, and Society (STS):

- Science or engineering majors who want to place their interests in a social context

- Humanities or social sciences majors who want to include science, engineering, and their social consequences in their education
- Students who want to study science and engineering at a meta-level (philosophy of science, sociology of science, history of science, etc.).

LIM Science ,Technology, and Society ID Major

In addition to the standard STS ID major requirements, there are further stipulations for LIM students: A LIM student doing an ID major with STS may not count STS electives in science or engineering. Therefore, all of the STS courses that a LIM student takes for their STS ID major must come from the Humanities or Social Sciences.

Science ,Technology, and Society Digital Studies Minor

Minor requirements

Students wishing to minor in Digital Studies (DS) will be required to take six courses.

Two Core Courses

STS 101 - Intro to Science, Technology, and Society

Course Units: 1 This course introduces students to the range of methodologies, epistemologies, topics, and concerns central to the fields of Science, Technology, and Society (STS). How do scientific concepts develop, take root, and evolve? What range of roles do scientists and engineers play as they interact and intersect with broader societies? How might scientific practice and theory affect public planning and discourse? What are the social, political, anthropological, moral, religious, philosophical, and ethical dimensions of technosciences complex roles in human cultures and societies? These are some fundamental questions that we will explore together in this survey course, which is a team-taught class offered by three or four of Union Colleges faculty members. **CC:** GCHF, GETS **ISP:** STS

and

EGL 140 - Introduction to Digital Studies: Digitizing the Past

Course Units: 1 The digital age and the medieval period-two disparate phases of history-may at first blush appear to have nothing in common. Yet, as medieval scholars have shown, this myth is best dispelled in and through the medieval manuscript, a physical object representing the convergence of text and technology in its earliest form. Using the medieval manuscript as a case study, this class will introduce students to digital topics such as online storytelling, digital archives and curation, online exhibits, data interpretation, and more. Along the way, students will learn skills of technical literacy, written analysis, and archival interpretation using programs such as Omeka, Artsteps, Audacity, Voyant Tools, and StoryMaps. **Cross-Listed:** SMT 140, AAH **CC:** HUL, WAC, HUM

Or

HST 140 - History Done Digitally

Course Units: 1 What do you think of when you hear "Humanities"? If you ask someone who works in the humanities what they study, you may hear a hundred different answers: great authors like Chaucer, established historians such as Geoffrey of Monmouth, fantastic works of art such as Myron's Discobolus. You seldom will hear "Data." But that is exactly what all of these great works of literature, history, and art are. Once we make that recognition, a new world opens up. In the modern world, countless tools have been developed to facilitate the access, analysis, and dissemination

of data. In this course, we will learn how to use computing technologies (e.g. Voyant Tools, OpenRefine, ArcGIS StoryMaps etc.) to both ask questions that are traditional to the humanities and come up with new questions enabled by the use of these technologies, as well as how technology can make our findings more accessible and understandable. **Cross-Listed:** CLS-193 **CC:** HUM, QMR, SOCS, GDQR

CLS 193 - History Done Digitally

Course Units: 1 What do you think of when you hear "Humanities"? If you ask someone in the humanities what they study, you may hear a hundred different answers: great authors, established historians, artistic masterpieces. You seldom hear "Data." But that is exactly what all of these works are. In the modern world, countless tools have been developed to facilitate the access, analysis, and dissemination of data. In this course, we will learn how to use various technologies to both ask and answer questions traditional to the humanities and come up with new ones, with a focus on the ancient and medieval world. **Cross-Listed:** HST-140 **CC:** HUM, QMR, GDQR **ISP:** STS

Digital Methods

One "Digital Methods" course in Data Analytics/Computer Science

Digital Creations

One "Digital Creations" course in Digital Media.

Digital Cultures

Two "Digital Cultures" electives in DS-desinated courses from any division(s) in which digital toolsand methods are employed qualitatively and/or quantitatively in course concepts, projects, and/or analysises.

Digital Studies Course Selection

Digital Methods courses can be any introductory courses in Data Analytics/Computer Science that do not have additional prerequisites (e.g., any 100-level CSC courses). Digital Creations courses can be any 100-level Digital Media courses or other courses in Digital Media that do not have additional prerequisites (e.g., AVA 160 "Digital Art"). DS courses that are in Digital Media will count for the initial required Digital Creations course requirement. DS courses in Computer Science and Data Analytics will count for the Digital Methods initial requirement. Any classes that a student takes beyond their one required course in Digital Media and Data Analytics/Computer Science may, if DS designated, qualify as a Digital Cultures elective (but the program director must be consulted in such cases for approval). All other courses will qualify for the Digital Cultures requirement, if those courses bear the DS designation. Furthermore, students must take at least one course at the 200-level or beyond that counts toward the DS minor. DS minors may also minor in Data Analytic or Digital Media at Union College, as long as such double minoring constitutes 12 unique courses. Students may not "double count" courses across these minors.

Science ,Technology, and Society ID Major

The STS ID Major consists of eight courses: all students take one core course (STS-101:"Introduction to Science, Technology, and Society") as well as a two-term interdisciplinary senior thesis. If the other half of the interdepartmental major is in Sciences or Engineering, then these students will do a three-course concentration in either (1) history and political science, (2) economics, (3) sociology and anthropology, or (4) philosophy, with all of these classes drawn from the online list of STS courses, as well as three other courses from this list. If the other half of the interdepartmental major is Humanities or Social Sciences, then these students will take three courses in Engineering

and Science, each of which must count for the major of the respective Engineering or Science department, as well as three other STS courses from the online list.

Science ,Technology, and Society Major

Union Students who declared the SMTC major, SMTC ID major, and SMTC minor previous to August 2022 will follow the respective curricular requirements as listed in the Union Course Catalog. Students who declare a STS major, LIM STS ID major, STS minor, or DS minor after August 2022 will follow the respective curricular requirements as listed in the Union Course Catalog.

Requirements for the Major:

The STS major will consist of twelve courses: all students must take STS-101 "Introduction to Science, Technology, and Society", a three course concentration in either (1) history and political science, (2) economics, (3) sociology and anthropology, or (4) philosophy, with all of these classes drawn from the list of STS courses listed on our program website; three courses in engineering and science, each of which must count for the major of the respective engineering or science department; three STS courses drawn from the online list; and a two-term interdisciplinary senior thesis. No more than six of the courses that count toward the STS major may be numbered 0XX or 1XX (students must take at least six courses at the 200-level or beyond that count towards the STS major).

SMT/STS Courses

Core Courses (1 course)

STS 101 - Intro to Science, Technology, and Society

Course Units: 1 This course introduces students to the range of methodologies, epistemologies, topics, and concerns central to the fields of Science, Technology, and Society (STS). How do scientific concepts develop, take root, and evolve? What range of roles do scientists and engineers play as they interact and intersect with broader societies? How might scientific practice and theory affect public planning and discourse? What are the social, political, anthropological, moral, religious, philosophical, and ethical dimensions of technosciences complex roles in human cultures and societies? These are some fundamental questions that we will explore together in this survey course, which is a team-taught class offered by three or four of Union Colleges faculty members. **CC:** GCHF, GETS **ISP:** STS

Capstone Course

STS 498 - Science, Technology, and Society Senior Thesis 1

Course Units: 0.0

STS 499 - Science, Technology, and Society Senior Thesis 2

Course Units: 2.0 **CC:** WS

Electives

Anthropology

ANT 230 - Medical Anthropology

Course Units: 1.0 An examination of beliefs about illness, healing, and the body and how these are shaped by culture and society. Topics include healing practices across cultures, political forces shaping medical practice in the U.S., and birthing practices in different cultures. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** GSW,STS

ANT 234 - Health and Healing in Africa

Course Units: 1.0 This course will explore the diversity of health-related beliefs and practices across Africa. We will firmly situate perspectives and approaches to health and illness within a broad sociocultural and historical context, also helping to challenge stereotypes associated with the continent. By cultivating a deeper knowledge of how African communities perceive and treat afflictions as well as international responses to health crises (e.g. Ebola), we will develop a cross-cultural perspective that expands our understanding of global, as well as local, health and healing. **CC:** LCC, SOCS **ISP:** STS

ANT 240 - Technology, Culture & Society

Course Units: 1.0 Examines the role of technology in cultural change and the role of culture in technological change. Particular attention will be given to: the Internet and other so-called "virtual community" formations, graphic design and other media, "reality" TV, cross-cultural advertising, and popular music. **CC:** LCC, SOCS **ISP:** FLM, GSWS, STS

ANT 241 - Environmental Anthropology

Course Units: 1.0 This course examines anthropological approaches to the environment and environmentalism. It asks questions such as: How does culture shape our perception of nature? What can conflicts over environmental protection, natural resources and human manipulations of natural materials tell us about contemporary societies? What does it mean to call an issue "political" or "cultural," versus "scientific" or "technical"? Students will develop the critical analysis skills to examine the natural world as a site of cultural politics, using anthropological concepts to examine environmentalism in diverse geographical and historical settings, including the Amazon, the Niger Delta, the suburban mall, and the Union campus. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** ENS, STS

ANT 258 - Anthropology of Media

Course Units: 1.0 How do communications media reshape ourselves and the worlds we inhabit? This course examines the influence of media on contemporary society. It focuses on identity formation and the different ways that scholars have approached the relationship between media and our taken-for-granted norms, practices, and beliefs. Readings draw from a wide range of disciplines and intellectual traditions, including cultural studies, critical media theory, critical race studies, feminist studies and communication. However, the fundamental approach is anthropological. Our aim is to understand how everyday media practices relate to larger issues of personal, social and cultural identity. To this end, the class moves back and forth between theory and ethnography so that students develop both a sense of key questions in the field and an idea about how to answer them. **CC:** SOCS, WAC, GCHF, GSPE **ISP:** STS

ANT 272 - Psychological Anthropology

Course Units: 1.0 This course examines the influence of culture and society on individual psychology. Readings and class discussions examine the history of the way anthropologists have thought about the relationship between culture and personality. Issues examined will include: Do cultures produce and favor distinctive personality types? How is mental illness shaped by cultural beliefs and social practices? Are there distinctive "culture bound syndromes" and, if so, what produces them? Do cultures provide tools to help individuals adjust to crises? Do some cultures do this better than others? Are emotions fundamentally the same across cultures or does emotional experience vary significantly with culture? Is there a culture of psychiatry in the US? How do our cultural assumptions and our pharmaceutical industries

shape our views of personality and mental illness? Cases will be drawn from Oceania, Asia, North America, and the Middle East. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AIS, GSW, STS

Art History

AAH 115 - Leonardo da Vinci: Science, Art, and Technology in the Early Modern Era

Course Units: 1.0 This course explores the history of science and technology during a fascinating and complex period when "modern" sciences and engineering are just beginning to emerge in Western Europe. Our focus will be on the artist and thinker Leonardo da Vinci, whose writings, drawings and other works of art provide a vivid picture of the state of imagination, observation, and the pursuit of scientific and technological knowledge, both theoretical and practical, during a time of great change. Leonardo's remarkably varied interests will allow us to study a wide range of subjects, from botany, optics and astronomy to hydraulic, civil and military engineering; from mining and metallurgy to anatomy and medicine; from diving bells to flying machines. This course has no prerequisites. **CC:** HUM, LCC, WAC **ISP:** STS

AAH 205 - The Art and Science of Painting

Course Units: 1.0 A historical and chemical grounding in the topic of painting and its impact on society, with a focus on the 14th to the 17th centuries. Topics include inorganic and organic pigments and binders used in late medieval workshops, fresco painting, the tempera tradition, and oil painting in the Renaissance (properties of oil, mixing pigments, glazing, drying). Students will work with primary sources and secondary literature, and engage in laboratory experimentation. **Cross-Listed:** CHM 090 **CC:** SET, HUM **ISP:** STS

AAH 265 - Environmentalism and Globalization in Contemporary Art

Course Units: 1.0 This course examines artistic practices that meld science, aesthetics, and politics in imaginative and critical ways as they address environmentalism and globalization. The course primarily focuses on 21st century artists whose work takes on such subjects as pollution, biodiversity, sustainability and climate change. We will consider the blurring of the boundaries between art and activism and the many art genres and strategies used to address these issues from photography and sculpture to community collaborations and public art. **CC:** HUM, GCAD, GCHF, GSPE **ISP:** AMS, ENS, STS

Astronomy

AST 050 - The Solar System

Course Units: 1.0 An introductory but detailed discussion of the solar system with special emphasis on the application of physics and the measurement of fundamental properties. Topics include the contents of the solar system (earth, moon, sun, planets, asteroids, comets), formation of the solar system, evolutionary processes (cratering, volcanism, tidal effects), extrasolar planetary systems, and possibilities of life on other planets. Labs will be performed in which students learn how to find and observe the planets and measure fundamental properties. No background in mathematics or physics required. **Corequisite(s):** AST 050L **CC:** SCLB, SET, GNPS **ISP:** STS

AST 058 - Astrobiology: Life in the Universe

Course Units: 1.0 Does life exist elsewhere in the universe, or are we alone? The emerging science of astrobiology attempts to answer this fundamental question using an interdisciplinary approach rooted in biology and astronomy. This course will examine the current state of our scientific knowledge concerning the possibility of life elsewhere in the

universe. Topics include: the nature and origin of life on Earth, the possibility of life on Mars and elsewhere in the Solar System, the search for extrasolar planets, the habitability of planets, and the search for extraterrestrial intelligence. **CC:** SET **ISP:** STS

Biology

BIO 050 - Topics in Contemporary Biology

Course Units: 1.0 Recent developments in biology are pertinent to human health and to concerns of the nature of life and of human social values. This course will focus on human genetics, human genetic diseases, the genetic component of other diseases, the genetics of cancer, and the immune system. **Corequisite(s):** BIO 050L **CC:** SCLB **Lecture/Lab Hours** One lab every other week. **ISP:** STS

BIO 058 - Astrobiology

Course Units: 1.0 Does life exist elsewhere in the universe or are we alone? The emerging science of astrobiology attempts to answer this fundamental question using an interdisciplinary approach rooted in both biology and astronomy. This course will examine the current state of our scientific knowledge concerning the possibility of life elsewhere in the universe. Topics include the nature and origin of life on Earth, the possibility of life on Mars and elsewhere in the solar system, the search for extra solar planets, the habitability of planets, and the search for extraterrestrial intelligence. **Cross-Listed:** AST 058 **CC:** SET **ISP:** STS

BIO 077 - Technology of Biology

Course Units: 1.0 Advances in technology have been utilized by scientists and physicians for many centuries. Today, with the rapid developments in molecular biology, the technology often outpaces the understanding and acceptance of the public. This course will look at technological advances relating to biology from both a historical and modern perspective, with an emphasis on how molecular biology has revolutionized our lives. Medical, environmental, and industrial topics will be included. **Prereq/Corequisite(s):** Not open to students that have already completed BIO 103 or BIO 104 **CC:** SET **ISP:** STS

BIO 094 - Understanding Cancer

Course Units: 1.0 Everyone has been touched at some point in their lives by cancer. This course aims to provide insight into the fundamental concepts involved in the life cycle of a cell, how cancer is related to those processes, and how those fundamental processes have led to advances in cancer treatment. **Prereq/Corequisite(s):** Not open to students who have already completed BIO 103 or BIO 104 **CC:** SET **ISP:** STS

BIO 243 - Bioinformatics: Information Technology in the Life Sciences

Course Units: 1.0 The disciplines of biology and information technology are intersecting with increasing frequency, most notably in the emerging field of bioinformatics. Bioinformatics has been fueled by the advent of large-scale genome sequencing projects, which has generated enormous sets of "mineable" data representing an invaluable resource for biologists. Biology and computer science students in the course will gain a working knowledge of the basic principles of the others' discipline and will then collaborate together in class on bioinformatics projects. Topics include pairwise and multiple sequence alignments, phylogenetic trees, gene expression analysis, and personalized medicine. **Cross-Listed:** CSC 243 **Prerequisite(s):** BIO 205 or a C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , or CSC 108 **CC:** SET **ISP:** STS

Chemistry

CHM 060 - Meals to Molecules

Course Units: 1.0 What is a healthy diet? This course will discuss human nutrition from a molecular perspective. Readings from the textbook and laboratory exercises will familiarize the student with the components of foods and how these components are used by the human body. In addition, the course will examine the benefits and pitfalls of supplementation of the diet with vitamins, etc., and discuss how to interpret health claims. **Corequisite(s):** CHM 060L **Prereq/Corequisite(s):** Not open to students who have completed CHM 101 or CHM 110H , or have AP credit in chemistry. **CC:** SCLB **ISP:** STS

CHM 080 - Culinary Chemistry

Course Units: 1.0 This culinary-themed course is an introduction to the chemistry involved in food preparation and cooking. The course will include lecture and a laboratory experience with inquiry-based exercises in both the traditional chemical laboratory setting and a typical kitchen setting. Topics include the chemical make-up of the food we eat, the relationship between structure and flavor, and how chefs exert exquisite control over chemical reactions to create the flavor and texture of a gourmet meal. **Prereq/Corequisite(s):** Not open to students who have completed CHM 101 or CHM 110H , or have AP credit in chemistry. **CC:** SCLB **ISP:** STS

CHM 090 - The Art & Science of Painting

Course Units: 1.0 A historical and chemical grounding in the topic of painting and its impact on society, with focus on the 14th to 17th centuries. Topics include inorganic and organic pigments and binders used in the late medieval workshop, fresco, the tempera tradition, and oil painting in the Renaissance (properties of oil, mixing with pigments, glazing, drying). Students will work with primary sources and the secondary literature, and engage in laboratory experimentation. **Cross-Listed:** AAH 205 **CC:** SET, HUM **ISP:** STS

Classics

CLS 153 - The Environment in the Ancient World

Course Units: 1.0 Students will discover how ancient Mediterranean societies interacted with the natural world, as revealed by history, art and literature, and archaeology. Some of the questions we will investigate include: how did the Mediterranean environment affect and determine everyday life, both in cities and in rural areas? How did ancient societies manage their food supply? What was their view of nature? How did they react to ecological crisis? And, finally, how can we use their outlook on and treatment of the environment to inform our own approach? **CC:** HUM, LCC, GCHF **ISP:** ENS, STS

CLS 190 - Science and Technology in the Ancient World

Course Units: 1.0 This course is an introduction to the scientific and technological developments during the Greek and Roman periods. Students will deepen their understanding of the scientific method, acquire skills in its application in the evaluation of evidence, and learn about the impact of science and technology on ancient civilization. The time periods covered in this class will stretch from Bronze Age of Greece to the Late Roman Empire. This course will discuss a broad range of scientific and technological topics. Students will learn about this crucial aspect of antiquity predominantly through the reading of original sources in translation. Because of the diverse nature of the topics, the authors will range greatly, including such authors as Hesiod, Pliny the Elder, and Frontinus. Students will be expected to draw conclusions from the primary source material as well as connect the ancient texts to other scholarly readings. The secondary reading will be drawn from a variety of academic disciplines, including classics and history of science. Ultimately, students will gain a better understanding of the role that ancient technological and scientific developments have had in their own world. **CC:** HUM **ISP:** STS

CLS 192 - Ancient Medicine

Course Units: 1.0 This course explores the Greek and Roman roots of Western medicine. How did the Hippocratic writers, Galen, and other physicians understand and treat the ailments of patients? And what did it mean, in the first place, to be a physician or a patient two millennia ago. **CC:** HUM **ISP:** STS

CLS 193 - History Done Digitally

Course Units: 1 What do you think of when you hear "Humanities"? If you ask someone in the humanities what they study, you may hear a hundred different answers: great authors, established historians, artistic masterpieces. You seldom hear "Data." But that is exactly what all of these works are. In the modern world, countless tools have been developed to facilitate the access, analysis, and dissemination of data. In this course, we will learn how to use various technologies to both ask and answer questions traditional to the humanities and come up with new ones, with a focus on the ancient and medieval world. **Cross-Listed:** HST-140 **CC:** HUM, QMR, GDQR **ISP:** STS

Computer Science

CSC 055 - Working with the Web

Course Units: 1.0 Design, writing, and publishing of WWW pages; creation of graphical images; study of the underlying Web technologies such as communication protocols, digital encoding and compression; programming of Web pages. **CC:** SET **ISP:** STS

CSC 080 - History of Computing

Course Units: 1.0 A survey of tools for computation, from number systems and the abacus to contemporary digital computers. The course focuses on the development of modern electronic computers from ENIAC to the present. Study of hardware, software, and the societal effects of computing. **Cross-Listed:** HST 292 **CC:** SET **ISP:** STS

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 104 - Robots Rule! Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a robotics theme. Introduces students to algorithms, basic data structures, and programming techniques. Students will build and program robots, exploring mobility, navigation, sensing, and inter-robot communication. Additional class topics include: history of robotics, social and ethical issues, emotionally intelligent behavior and other current topics in robotics. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 105 - Game Development: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a computer games theme. Introduces students to algorithms, basic data structures, and programming techniques. Computer game development is used as an example application area and students implement their own games throughout the course. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area, focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 108 - Scientific Computing: Introduction to Computer Science

Course Units: 1.0 Computers are used as tools in analyzing and solving scientific problems as well as being embedded in many applications and experimental equipment used by today's scientists. This course is designed to introduce students to computer programming and problem solving through the use of Python. Python is a language commonly used by the scientific community, and we will focus on using it to address scientific problems, using extensions that facilitate scientific computing. CC: QMR, SET Note: A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 240 - Web Programming

Course Units: 1.0 This course addresses the standards in programming applications for the Web. It covers the client-side technologies HTML, CSS, and JavaScript as well as server-side technologies PHP and MySQL. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 **CC:** SET **ISP:** STS

CSC 243 - Bioinformatics: Information Technology in the Life Sciences

Course Units: 1.0 Biology and computer science students will gain a working knowledge of the basic principles of the others' discipline, and will collaborate together on bioinformatics projects. Topics include pairwise and multiple sequence alignments, phylogenetic trees, gene expression analysis, and protein structure prediction. Additional topics will be presented by invited speakers. **Cross-Listed:** BIO 243 **Prerequisite(s):** BIO-205 **or** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 ,or CSC 108 . **CC:** SET **ISP:** STS

CSC 245 - The Computer Science of Computer Games

Course Units: 1.0 This course surveys the field of computer science from the perspective of computer games. Topics explored include: rendering of graphics to a screen, implementation of realistic simulation, use of artificial intelligence in games, handling user input, game physics, collaborative development. Final course project is a complete computer game. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 . **CC:** SET **ISP:** STS

Economics

ECO 134 - Data Visualization

Course Units: 1.0 The digital world we live in generates vast amounts of data. This data has the potential to help us understand the world and make better decisions. This course is about representing data using the visual domain. We learn how to turn gigabytes of numbers into pictures and interactive displays. We will use the visual domain not only for communicating insights but also as a means of analysis. We will learn about data structures (how to connect to data), data aggregation (how to summarize data), and principles of design (how humans consume visual content). We will apply these concepts to business and economic data, including sales, financial performance, pricing, etc. The emphasis is on hands-on exercises and creation of new visualizations using data visualization software Tableau. **CC:** SOCS, JDQR **ISP:** STS

ECO 228 - Environmental and Natural Resource Economics

Course Units: 1.0 Economic causes of environmental degradation and natural resource depletion; benefit-cost analyses of public policies for environmental protection and natural resource preservation; specific issues in energy and wilderness resource management, air and water pollution abatement, and solid waste management. **Prerequisite(s):** ECO 101 or permission of instructor. **CC:** SOCS **ISP:** STS, ENS

ECO 332 - Economics of Technological Change

Course Units: 1.0 The course will cover both macro and micro aspects of technological change. Topics include: Exogenous growth models, innovation-driven Schumpeterian growth models, creative destruction and the economy, competition and market structure, valuation of Research and Development (R&D) and patents, patent litigation and enforcement of Intellectual Property Rights (IPRs), innovation, technology diffusion in the global economy, and design of IPR regimes and R&D policies. **Prerequisite(s):** ECO 241 or ECO 242 **CC:** SOCS **ISP:** STS

ECO 335 - Economics of Health

Course Units: 1.0 Examination of demand and supply for medical personnel; analysis of hospital cost, inflation, and health insurance. Discussion of issues in cost benefit analysis of public health and regulation of health care markets. **Prerequisite(s):** ECO 241 and ECO 243 , or permission of the instructor. **CC:** SOCS **ISP:** STS

Engineering Science/Engineering

ESC 100 - Exploring Engineering

Course Units: 1.0 An introduction to engineering including fundamental topics core to engineering. The course includes a weekly design studio that emphasizes engineering design, teamwork, technical writing and ethics through several individual and team design projects. Not available to junior or senior engineering students. **Corequisite(s):** ESC 100L **CC:** SET, GETS **ISP:** STS **Note:** General engineering course common to more than one program.

ESC 104 - Geographical Mechanism Synth

Course Units: Early engineers relied on intuition and graphical techniques to design mechanisms throughout history, this course explores these graphical techniques. Many of these techniques are still in use today to provide insight into engineering problems and to solve contemporary challenges. The course also explores multiple techniques used to develop innovative mechanismdesigns. The course is appropriate for non-engineering, non-science, and engineering majors alike. As part of the course, students will identify a challenge they encounter and will be lead through the human centered design process to create a functional prototype of the solution. **CC:** GETS **ISP:** STS

English

EGL 140 - Introduction to Digital Studies: Digitizing the Past

Course Units: 1 The digital age and the medieval period-two disparate phases of history-may at first blush appear to have nothing in common. Yet, as medieval scholars have shown, this myth is best dispelled in and through the medieval manuscript, a physical object representing the convergence of text and technology in its earliest form. Using the medieval manuscript as a case study, this class will introduce students to digital topics such as online storytelling, digital archives and curation, online exhibits, data interpretation, and more. Along the way, students will learn skills of technical literacy, written analysis, and archival interpretation using programs such as Omeka, Artsteps, Audacity, Voyant Tools, and StoryMaps. **Cross-Listed:** SMT 140, AAH **CC:** HUL, WAC, HUM

EGL 276 - Literature of the Manor House

Course Units: 1.0 In this course we will investigate the rich and complex history of the genre of English manor house fiction. Focusing on texts ranging from Jane Austen's *Northanger Abbey* and E. M. Forster's *Howards End* to Kazuo Ishiguro's *The Remains of the Day*, Sarah Waters' *The Little Stranger*, and Ian McEwan's *Atonement*, we will explore issues of gender, sexuality, race, and especially class in both course readings and class discussions. Furthermore, we'll examine a number of filmic representations of British country house life, including Robert Altman's *Gosford Park* and Julian Fellowes' *Downton Abbey*. In addition to crafting course papers, students will have the option to research, create, and showcase their own multi-media projects exploring virtual manor homes via a range of freely downloadable programs and platforms. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD, JLIT **ISP:** GSW, STS

EGL 279 - Literature and Science

Course Units: 1.0 An interdisciplinary examination of the interactions between literature and science. Topics will vary from year to year and may include science writing, the representation of science and scientists in literature, literature inspired by science, literature and science as competing ways of knowing the world, the figurative dimension of scientific writing, and speculative fiction. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, STS

EGL 280 - Nature and Environmental Writing

Course Units: 1.0 This course will focus on the traditions of nature and environmental writing in the American context, with an emphasis on the social and cultural dynamics of the environment and environmental action. Among other questions, we will ask ourselves: How do class, gender, and race enter into the nexus of social interactions that shape our environment? What is the place of literature in community, literacy, and environmental activism? What are the connections between the ways we speak and write about the environment and our actions toward the environment? How does the wilderness concept affect the ways citizens have access to public spaces? We will consider the concept of "nature" as we move through the course, culminating (if you like) with some nature writing of your own. Readings may include Thoreau; Carson; Leopold; Kingsolver, and selections from *Reading the Roots: American Nature Writing Before Walden*; *Colors of Nature*; Lauret Savoy, T*race: Memory, History, and the American Landscape*; and F. Marina Schauffler, *Turning to Earth: Stories of Ecological Conversion.* **Prerequisite(s):** One 100-level English course or a

score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, ENS, STS

EGL 281 - Environmental Psychology and the American Literary Landscape

Course Units: 1.0 Environmental research psychologist Maria Vittoria Giuliani emphasizes that human-to-place attachments "not only permeate our daily life but very often appear also in the representations, idealizations and expressions of life and affect represented [in] literature." Indeed, many literary works emphasize humanity's basic attachment needs and the importance person-to-place bonds have in the development of the human psyche. American fiction writers frequently employ descriptions of American landscapes as inspiration for character and plot development, and American nature writers often emphasize the way in which wilderness environments may influence one's mental and physical health and emotional well-being. In fact, recent studies in the field of cognitive neuroscience provide empirical evidence to substantiate the theory that exposure to a natural environment may actually generate structural changes in the brain by increasing oxygenation and blood flow that occur in response to neural activity. Hence, this course will employ contemporary studies in place attachment, environmental psychology, and cognitive neuroscience to examine the way in which various literary works illustrate the important role environment plays in aiding or obstructing one's ability to think, reason, remember, problem-solve, process information, use language, or be creative. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, ENS

EGL 284 - Interactive Fiction Workshop

Course Units: 1 Interactive fiction is storytelling that uses technology to create an interactive "reading" experience, requiring the reader to make choices that influence the plot. In this course you are going to read, critique, and create interactive fiction. You'll develop your storytelling skills, and along the way you'll learn some programming concepts, and history of narrative. video games. We'll also consider how race, gender, class, sexuality, and (dis)ability shape our experiences of these games as players and writers. No previous CS experience is necessary. Students will need access to a laptop for class. **Cross-Listed:** CSC 084 **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of instructors. **CC:** HUL, HUM, SET, WAC, JCAD, JETS, JLIT **ISP:** AMS, GSW, STS

EGL 306 - Jr. Seminar (Spring): The Beatles, Motown, and Taylor Swift

Course Units: 1.0 This is a course on the cultural politics of popular music. Since pop music is, by definition, ephemeral - shaped by and to some degree shaping the attitudes of a particular time and place - it can offer insights into what those attitudes were. On the contrary, some pop music transcends its cultural milieu, thus revealing something deeper about our culture in general. The Beatles, the most influential and still the most popular band of the rock era, offer one example; the musicians of Motown and other predominantly African-American recording platforms like Stax-Volt, without whom there would be no Beatles, offer another. After examining the lasting contributions of these artists as a foundation, we will, in the last weeks of the term, look at more contemporary pop musicians and their impact. Taylor Swift will be the focus, but students may nominate their own candidates (Beyonce? Rihanna? The Replacements?) for pop immortality and impact as well. **Prerequisite(s):** One 100-level and two 200-level English courses or instructor's permission. **CC:** HUL, HUM, WAC-R **Note:** No musical knowledge is required for this course. An ability to keep time and notice stand-out musical elements (key modulations, odd or interesting chords) would be useful but is not required. If you can play a bit, though, feel free to do so.

Environmental Studies

ENS 100 - Introduction to Environmental Studies

Course Units: 1.0 An introduction to environmental studies from a scientific, policy, and engineering perspective. This course covers human-environment interactions, with a focus on the impacts of human activities on natural systems such as climate, air, water, and species diversity and the ensuing environmental injustice. The course discusses sustainable solutions for how we can build systems that will support billions of humans and the natural world. Fieldwork during lab periods involves the investigation of local environmental problems and solutions. This course is intended for first- and second-year Environmental Science and Environmental Policy majors, but it is open to all students. **Corequisite(s):** ENS 100L **CC:** SCLB, GNPS **ISP:** ENS, STS

ENS 204 - Geographic Information Systems

Course Units: 1.0 An introduction to Geographic Information Systems (GIS) technology and its practical uses. Topics include history of GIS, geographic data types, primary data structures, system design, map coordinate systems, data sources, metadata, census data, geographic coding and address matching, digitizing, remote sensing imagery, measures of data quality, and needs assessment. An emphasis will be on hands-on instruction using GIS software (ArcView). Students will work with ArcView throughout the term to complete assignments and a class project. Focus areas include archeology, electric and gas utilities, surveying, health and human services, insurance, law enforcement and criminal justice, media and telecommunications, transportation, water and wastewater, and natural resources. The ultimate goal is to use the spatial component of data in conducting analysis and making decisions. **Prerequisite(s):** A good background in the use of modern computer software. **Corequisite(s):** ENS 204L **CC:** SET, GETS **Lecture/Lab Hours** Two class hours and two lab hours weekly. **ISP:** ENS, STS

ENS 208 - Waste Management and Recycling

Course Units: 1.0 This course will introduce students to various sources of solid waste materials including hazardous and nonhazardous waste, and biodegradable and non-biodegradable waste. Focus areas are overview of landfill systems, geosynthetics, geotextiles, geomembranes, geonets, single clay liner, single geomembrane liner, composite liner systems, leak detection and leachate collection, removal and treatment of leachate, and capping and closure systems. The recycling segment will explore natural resources of raw materials including origin and use. It will also investigate the potential and limitation for recycling of materials. The focus area will be various applications of recycling recyclable and nonrecyclable materials especially non-biodegradable waste. Discussion of methods of manufacture and compositions of such materials will concentrate on advanced industrial applications for the reuse of non-recyclable waste materials. Application areas include production of new materials, materials with superior qualities for special purposes, and materials with high level of resistance against certain environmental conditions. The course will also touch on the political aspect of recycling including consumer attitude and government incentives to encourage recycling. **Prerequisite(s):** ENS 100 or GEO 110 **CC:** SET, GETS **ISP:** ENS, STS

ENS 209 - Renewable Energy Systems

Course Units: 1.0 The study of renewable energy resources and the conversion technologies available to utilize them to meet society's energy needs. Topics include forms of energy; First and Second Laws of Thermodynamics; energy conversion and efficiency; sustainability; energy storage. Historical perspective on world and U.S. energy usage, conversion technologies, and energy resources. Fundamentals of the conversion processes and systems involved in the use of solar thermal and photovoltaic, wind, bioenergy, geothermal, thermoelectric, hydro and ocean technologies. The use of hydrogen as a fuel and technologies to produce and use it. Economic and environmental issues relevant to renewable energy resources. Class will be supplemented with laboratory demonstrations and field trips to visit existing renewable energy systems. **Prerequisite(s):** MER 231 or PHY 122 **Corequisite(s):** ENS 209L **CC:** SET **ISP:** ENS, STS

ENS 222 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been

dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** MLT 209 **CC:** LCC, SET, HUM, HUL, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

ENS 247 - Sustainable Infrastructure

Course Units: 1.0 Infrastructure is the backbone of nations. It is a society's inventory of systems and facilities that allow it to function properly and smoothly. This includes, but is not limited to, roads, bridges, tunnels, dams, transit, waterways, ports, aviation, pipelines, transmission lines, rail, parks, and public buildings such as schools, courts, hospitals, and recreational and sport facilities. Infrastructure involves services such as energy, water supply, wastewater treatment, power and gas distribution grids, waste collection, and sewer disposal. Major advances in technology resulted in digital infrastructure that includes communication networks, signal transmission towers, data centers, information repositories, servers/computers, and the Internet. This course explores the progress humanity achieved in developing infrastructure facilities and the present move towards sustainability. Methods, materials, processes, technologies, practices, and operations required to maintain a healthy environment and efficient infrastructure will be examined. The intersection between policies necessary for sustainable infrastructure and political, economic, social, societal, and cultural factors will be emphasized. **CC:** SET, GETS **Lecture/Lab Hours** Four class hours weekly. **ISP:** ENS, STS

ENS 252 - Geoenvironmental Applications

Course Units: 1.0 This course introduces field applications related to soil and water. It explores the natural characteristics and testing of soil as a construction material and as a bearing layer. It covers seepage analysis, aquifers, and well fields. It details the components of containment systems for waste disposal to alleviate environmental pollution and contamination. It also presents the basics of water movement in closed conduits and in open channels, and the development of supply networks. For labs, students gain experience in utilizing industry-standard testing methods of the American Society for Testing and Materials (ASTM). Tests include soil classification, composition, flow and permeability, compaction, compressibility, strength, slope stability, and environmental geotechnology with focus on the Environmental Protection Agency's (EPA) design specifications. **Prerequisite(s):** MTH 112 or higher, and PHY 120 or higher. **Corequisite(s):** ENS 252L **CC:** SCLB **Lecture/Lab Hours** Three class hours and a weekly lab. **ISP:** ENS, STS

ENS 253 - Environmentally Friendly Buildings

Course Units: 1.0 Many energy consumption and adverse environmental effects are attributable to buildings and their use. In this course, through instructions, hands-on experience, computer simulation, and research, the students will become acquainted with the inner workings of the subsystems in buildings: foundations, framings, walls, sidings, roof, electrical systems, lighting, appliances, heating, air-conditioning, ventilation, indoor air quality, basement, crawl space, attic, water and moisture management; plumbing, flooring, finishes, furniture, insulation, xeriscaping, and LEED rating system. The students will become aware of indoor and outdoor environmental issues and the life cycle costs of the existing systems. They will also learn the latest science and technology to reduce the negative effect of these subsystems on the environment. Laboratory: hands-on experience with the above subsystems, site visits, Computer simulations, research, projects, and presentations. There are no prerequisites for this course and it is open to all students. **Corequisite(s):** ENS 253L **CC:** SET, GDQR, GETS, SCLB **ISP:** ENS, STS

ENS 277 - The Water Paradox

Course Units: 1.0 Fresh water is tasteless, odorless, and colorless. These characteristics make water one of the most intriguing materials. It is a necessity for life. A paradox involves features or qualities of contradictory nature. Water is notorious with such qualities. Water is one of the cheapest materials yet it is the most precious commodity known to humanity. Water could be the source of peace and development yet it could be a reason for war and conflict. Water could be a force for good to generate hydropower yet unchecked or unregulated this force could be in the form of

destructive floods. Water could be a weapon to combat desertification yet too much thereof could cause erosion and failures. Floods come with loads of mud and silt that charge river deltas and keep them fertile yet weaker floods result in lesser deposits that could threaten river deltas with sea attacks. Water has always been a main reason for people to settle the land yet a shortage thereof could force people to migrate and leave their homeland. This course shows the role water played in the past, is presently playing, and will play in the future in defining communities and societies. **CC:** SET, GETS **ISP:** ENS, STS

ENS 291 - Construction for Humanity

Course Units: 1.0 An interdisciplinary introduction to the technology of construction and the social uses of building by humans. The course will consider types of building materials and their application to domestic housing, castles, cathedrals, palaces, monuments, dams, bridges, tunnels, factories, and office buildings. **Cross-Listed:** HST 291 **CC:** SET, GETS **ISP:** ENS, STS

ENS 299 - Environmental Forensics

Course Units: 1.0 An interdisciplinary course that will present topics detailing the intersection between the environment, ethics, law, society, litigation, policy, economics, pollution/contamination, cleanup, testing, standards, and sustainability. Sources of environmental problems are usually related to emissions, pollution, contamination, and/or waste disposal. Whether the cause is intentional or non-intentional, natural factors or a man-made disaster, or due to normal operation or accident, a crisis ensues and cleanup becomes necessary. This inevitably leads to legal actions and litigations that rely on experts in conducting scientific investigations to establish the facts surrounding potential controversies. Topics discussed in the course include liability, environmental site assessment, insurance litigation, toxic torts, science tools, sampling & measurements, statistical analysis, chemical fingerprinting, contaminant transport models, and environmental forensic microscopy. The course will illustrate the above points using case studies. **CC:** SET, GETS, WAC **ISP:** ENS, STS

ENS 302 - U.S. Energy Policy

Course Units: 1 Transitions to zero-carbon sources of energy are a critical part of addressing climate change globally. Within various parts of the United States, this transition has been slow and involved a number of political conflicts. Fossil fuel corporations, energy interest groups, and several other actors have fought over the direction of energy policy, with these battles largely occurring at the state and local levels. This class explores these relationships and conflicts to understand the battles over a clean energy transition in the United States and the implications for addressing climate change. **Cross-Listed:** PSC 302 **CC:** SOCS **ISP:** ENS, STS

Geology

GEO 106 - Introduction to Oceanography

Course Units: 1.0 The oceans cover 71% of the planet, 97% of the earth's available water, and 50% of the planet's species, but more than 95% of the ocean remains unexplored. This course covers physical, chemical, and biological oceanography. The course involves an examination of plate tectonics, ocean currents and the forces driving them, the role of the oceans in climate change, coastal processes and sea level change, biological productivity, and the ocean fishing industries. **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 109 - Global Climate Change

Course Units: 1.0

Global climate change is the defining environmental issue of our time. The impacts of climate change disproportionally affect populations who have contributed the least to atmospheric greenhouse gas loading. This course will review the basis for the overwhelming scientific consensus that ongoing warming is not natural; topics include: the radiation balance of Earth, the role of greenhouse gases on Earth's surface temperature, atmospheric and oceanic circulation, and natural oscillators in the climate system. A significant portion of the course is dedicated to understanding natural climatic variability. Students will prepare and submit policy briefs to policy makers at the federal, state, and/or local level that outline ways to mitigate and/or adapt to climate change. Preference given to first and second year students. **Corequisite(s):** GEO-109L
CC: SET, GNPS **ISP:** ENS, STS

GEO 110 - Introduction to Geosciences

Course Units: 1.0 Examination of Earth materials and processes: How our dynamic planet works including plate tectonics, geologic age determination, processes that form the rocks we see at the Earth's surface, development of the stunning variety of landscapes we see, and other topics of contemporary interest including floods, underground water resources, coastal erosion, earthquakes, landslides, volcanoes, and climate change. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 110L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 112 - Environmental Geology

Course Units: 1.0 The increasing interplay between the environment and human activity has profound effects on our landscape and society. This course focuses on anthropogenic issues such as climate change, soil and groundwater contamination, traditional petroleum resource extraction and dependence, mineral and water resources, and alterative sources of energy. To understand how humans have perturbed the natural environment, it is critical to understand geologic principles and processes. The course also explores natural disasters including earthquakes, volcanoes, hurricanes, landslides, floods, and coastal erosion and their effects on different segments of society, as the impacts of natural disasters are affected by various socio-economic factors. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 112L **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 117 - Natural Disasters

Course Units: 1.0 An introduction to the geologic processes causing floods, earthquakes, volcanoes, landslides, and other natural hazards and how hazards affect people and society. The course will include discussion of major events in the geologic and historical record as well as future hazard potential. We will assess the risks humans face in different regions, including local hazards, our contribution to geologic hazards, and how we can minimize and cope with future events. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 117L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 120 - The Story of Earth and Life

Course Units: 1.0 An investigation of Earth's dynamic history and evolutionary changes over the past 4.5 billion years. Topics include impacts of climate change, the evolution of life, major changes in the nature of Earth's atmosphere and oceans, and for major mountain building events that have affected the continents as well as the evolutionary development of plant and animal life as recorded in the geologic record. Specific topics include the origin of life, mass extinctions of dinosaurs and other organisms, paleoclimate, and the geologic history of New York State. The link between geology, chemical cycles and life is highlighted, as is the relation of past biogeochemical changes to current global environmental change. Field trips during lab investigate local geologic history and the course may require a weekend field trip. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 120L **CC:** SCLB, GNPS, SET **ISP:** ENS, STS

GEO 220 - Mineral Science

Course Units: 1.0 Mineral science is foundational for other geology and environmental science courses, as well as many other scientific disciplines that encounter crystalline solids. This class provides students with a solid understanding of minerals, which are the building blocks of all rocks on this and every other planet, and provide most of our industrial resources, many building materials and precious gems. A successful student leaving this class will be able to identify most common minerals when they occur "in the wild" and be familiar with their internal structure and crystal chemistry. The practical use of state-of-the- art analytical techniques common to the study of solid materials is emphasized to elucidate the links between internal crystalline structure and macroscopic physical properties. Students will use the scanning electron microscope, the x-ray diffractometer and the polarizing light microscope. In addition to learning the fundamentals of mineral science, students will gain appreciation for the beauty and symmetry present in the natural world. **Prerequisite(s):** CHM 101 or equivalent and any 100-level geosciences course. **Corequisite(s):** GEO 220L **ISP:** ENS

History

HST 138 - Big History

Course Units: 1.0 An exploration of the past from the big bang to the present, dividing the history of the universe, earth, life, and humanity into periods using very large scales of time. **CC:** SOCS, GCHF **ISP:** ENS, STS

HST 229 - The Adirondacks and American Environmental History

Course Units: 1.0 The Adirondack region of northern New York Slate has been a proving ground for shifting American attitudes toward the environment, from early colonial (ears of wilderness, to intensive resource exploitation, and to efforts to conserve natural resources and preserve distinctive wilderness areas. This course will examine Adirondack environmental history and place it in the context of broader American environmental history. It will leverage Union College's proximity to the region, and the resources of the Union College Kelly Adirondack Center, to offer students both intellectual and experiential engagement with the history of this distinctive place. **CC:** SOCS **ISP:** AMS, ENS, STS

HST 256 - Modern European Ideas

Course Units: 1.0 This course will survey important ideas in modern European history, including the writings of Jean Jacques Rousseau, Voltaire, Montesquieu, Adam Smith, Karl Marx, Charles Darwin, Friedrich Nietzsche, Sigmund Freud, Albert Einstein, Jean-Paul Sartre, Simone de Beauvoir, and Michel Foucault. **CC:** SOCS, WAC, JCHF **ISP:** REE, STS

HST 258 - Nazi Science, Medicine, & Technology

Course Units: 1.0 This course is a history of how science, medicine, and technology interacted with Nazism, beginning with the background of the First World War and Weimar Republic, through the Third Reich, and continuing through to its legacy during the post-Second World War era. This story extends beyond Germany, both because of the international effects of this interaction, and through comparisons with science, medicine, and technology under other regimes and in other cultures. **CC:** SOCS, JCHF, JETS, WAC **ISP:** STS

HST 269 - Epidemics and Empire

Course Units: 1 Do epidemics have different values across the world? Whose bodies appear to be more contagious than others? What is the politics of the creation of these differences? This course will allow us to study the history of epidemics such as cholera, bubonic plague, influenza, HIV/AIDS across the modern world so that we can find answers to these questions: when did disease become racial, when did some deaths matter more than others, and why did these

differences become so enduring that we saw them in the 21st century exposure to a pandemic, the Covid 19? **CC:** HUL, SOCS, WAC-R **ISP:** STS

HST 286 - Women in South Asia

Course Units: 1.0 This course takes a historical approach towards the topic of gender and sexuality in South Asia, with a particular, though not exclusive, focus on the history of women in the region. The course has three major goals: first, to analyze the colonial state and its policies with respect to women and gender relations; second, to study gender relations, women's voices and women's movements within the context of nationalist struggles in the post-colonial era; and third, to understand the complexities of trying to recover the "voice" of heterogeneous groups of women in South Asia, divided along lines of caste, class, region, occupation and religion. Study material will include academic texts, films and popular television from the subcontinent. **CC:** LCC, SOCS **ISP:** GSWS, STS

HST 291 - Construction for Humanity

Course Units: 1.0 An interdisciplinary introduction to the technology of construction and the social uses of building by humans. The course considers types of building materials and their application to domestic housing, castles, cathedrals, palaces, monuments, dams, bridges, tunnels, and skyscrapers. **Cross-Listed:** ENS 291 **CC:** SET, SOCS, GETS **ISP:** ENS, STS

HST 292 - History of Computing

Course Units: 1.0 A survey of tools for computation, from number systems and the abacus to contemporary digital computers. The course focuses on the development of modern electronic computers from ENIAC to the present. Study of hardware, software, and the societal effects of computing. **Cross-Listed:** CSC 080 **CC:** SET, SOCS **ISP:** STS

HST 293 - History of Medicine

Course Units: 1.0 This course offers a survey of the history of medicine in the Western world from the ancient Greeks to the present. We will consider several key moments in this history, such as the so-called "Greek miracle" in medicine (Hippocrates), the discovery of blood circulation (William Harvey), and the invention of bacteriology (Louis Pasteur and Robert Koch). In the last two class sessions we will focus more specifically on the history of psychiatry. All of the class readings are primary sources. **CC:** SOCS, WAC **ISP:** STS

HST 299 - The Nuclear Age

Course Units: 1.0 The nuclear age began with the discovery of radioactivity on the eve of the twentieth century and continues on to the present. The technology people have created to study and exploit the energy and particles released by nuclei, including nuclear weapons and nuclear power, but also many other applications in industry and medicine, have defined this age. This course will survey these economic, political, social, and cultural problems facing mankind: the proliferation of nuclear weapons, and human-induced climate change. **CC:** SOCS, GCHF, GETS, WAC **ISP:** ENS, STS

Interdisciplinary

ISC 203 - Exploring Healthcare Through Community

Course Units: 1 A field course combining supervised observation and/or community based learning experiences in various health care settings with the study of problems and means of health care delivery and the social determinants of health. Please see department for approval and application process. **CC:** WAC, JSPE **ISP:** STS

Mathematics

MTH 051 - Cryptology: The Mathematics of Secrecy

Course Units: 1.0 The course will focus on the mathematical aspects of public-key cryptography, the modern science of creating secret ciphers (codes), which is largely based on number theory. Additional topics will be taken from cryptanalysis (the science of breaking secret ciphers) and from contributions that mathematics can make to data security and privacy. **Note:** Not open to students who have passed (or have AP credit for) a college calculus course. **CC:** QMR **ISP:** STS

MTH 056 - History of Mathematics

Course Units: 1.0 Traces the development of mathematical ideas and methods in literate cultures from ancient Egypt and Mesopotamia, to Hellenistic Greece and medieval China, India and the Islamic world, up through the dawn of calculus at the start of the Scientific Revolution in early modern Europe. Topics include the interlinked changes and intercultural transmission of basic numeracy, arithmetic, geometry, trigonometry, algebra, practical computation and approximation, and concepts of the infinitely large and small. **Note:** Not open to students who have passed (or have AP credit for) a college calculus course. **CC:** QMR, JDQR **ISP:** STS

MTH 060 - Mathematics and Politics

Course Units: 1.0 A mathematical treatment (not involving calculus or statistics) of escalation, political power, social choice, and international conflict. No previous study of political science is necessary, but PSC 111 or PSC 112 would be relevant. **Note:** Not open to students who have passed (or have AP credit for) a college calculus course. **Cross-Listed:** PSC 123 **CC:** QMR **ISP:** STS

MTH 221 - Mathematical Cryptology

Course Units: 1.0 An in-depth look at the mathematical theory underlying modern methods to accomplish the secret transmission of messages, as well as other tasks related to data security, privacy, and authentication. **Note:** Not normally open to students who have passed MTH 235 or MTH 051. **Prerequisite(s):** MTH 199 or permission from the Chair. **CC:** GDQR **ISP:** STS

Modern Languages in Translation

MLT 209 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** ENS 222 **CC:** LCC, SET, HUL, HUM, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

MLT 208 - Chinese Medicine

Course Units: 1 This course covers the philosophical and practical origins of Chinese medicine to the political, social, and transnational realities of modern day research and practice. It examines qi, yin and yang, health and disease, as foundational concepts in the Chinese cultural worldview. The course provides an overview of different types of traditional medicine, and its focus on nourishing a healthy life, harmonious balance with self and nature. The course

compares Chinese and Western approaches to disease and treatment, providing a more nuanced understanding of biomedicine and scientific inquiry. **CC:** HUM, LCC, WAC **ISP:** AIS

Philosophy

PHL 232 - Philosophy of Science

Course Units: 1.0 An introduction to philosophy of science. What are scientific theories, and how are they tested? What is scientific method? What counts as evidence for a scientific theory? What is scientific explanation? We will approach these questions both philosophically and through formal techniques. **CC:** HUM **ISP:** STS

PHL 233 - Early Modern Philosophy

Course Units: 1.0 An examination of some of philosophy's "Greatest Hits," from some of the 17th and 18th centuries' greatest thinkers: Descartes, Leibniz, Locke, Berkeley, Hume, and Kant. We will consider questions like: Is there a God, and how could we know? Is your mind just your brain, or do you have an immaterial soul? What is free will, and are we just fooling ourselves when we think we have it? Does your subjective perception of the world correspond to how it is in reality, and how can you possibly know? Are there universal moral duties, which everyone has an obligation to follow regardless of their personal inclinations? **CC:** HUM **ISP:** STS

PHL 265 - Minds and Machines

Course Units: 1.0 Is it possible to build a computer that effectively simulates human intelligence? If we did so, would the computer really be intelligent, or would it merely seem to be: Would the computer have free will? Do we have free will, or is human freedom merely an illusion? Do we have immaterial souls that can survive the deaths of our bodies and brains? In this advanced introduction to the philosophy of mind, we will consider these and other questions about what it means to have a mind, and about the relationship between mind and the brain. **CC:** HUM **ISP:** STS

PHL 273 - Environmental Ethics

Course Units: 1.0 An exploration of the ethical and philosophical ideas that have shaped attitudes toward the environment and toward non-human species. **CC:** HUM **ISP:** ENS, STS

PHL 274 - Biomedical Ethics

Course Units: 1.0 An introduction to ethical problems in biology and medicine, touching on such issues as reproductive ethics (abortion, cloning), research ethics, the ethics of death and dying (assisted suicide, euthanasia) and similar subjects. **CC:** HUM **ISP:** STS

PHL 374 - Advanced Biomedical Ethics

Course Units: 1.0 An advanced historically based introduction to biomedical ethics. Among the subjects treated will be the relationship between bioethics and traditional medical ethics, the evolution of the discourse, core concepts, models, theories and organizational infrastructure of bioethics, including IRBs and ethics committees. The course is designed to serve as a foundation for graduate work in bioethics and to fulfill the required knowledge competencies recommended by the American Society of Bioethics and Humanities in its 1998 report Core Competencies for Health Care Ethics Consultation. **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM **ISP:** STS

Political Science

PSC 123 - Topics in Mathematical Political Science

Course Units: 1.0 A mathematical treatment (not involving calculus or statistics) of escalation, political power, social choice, and international conflict. **Cross-Listed:** MTH 060 **Prerequisite(s):** No previous study of political science is necessary, but PSC 111 or PSC 112 would be relevant. **CC:** QMR, SOCS **ISP:** STS

PSC 242 - Comparative Climate Change Politics

Course Units: 1 This year we have seen historic temperature records and heatwaves across the globe, the impacts of wildfires around the country and locally, and periods of drought and extreme storms in different areas. These have been attributed to or amplified by anthropogenic climate change, which is one of the biggest challenges facing society in the 21st century. This course examines why climate change is such a "wicked problem," and why it is so difficult to address effectively. The barriers to addressing climate change are not just technical and scientific, but also political and social. Thinking about a future where we as a society mitigate the worst impacts of climate change this century, and adapt to other impacts entails navigating different political systems around the world and balancing various geopolitical and economic interests. Through this course, we will examine how these factors shape or constrain efforts to address climate change in Western Europe, the United States, China, India, and other parts of the world. We will also examine how climate change is impacting human life and security in these countries and other parts of the world, and how it may amplify existing inequalities and other crises. **ISP:** ENS, STS

PSC 263 - US Environmental Policy

Course Units: 1 This course examines the emergence, development, and future directions of environmental policy within the United States. It covers early environmental policy achievements such as the Clean Air Act, the reasons for federal inaction on environmental policy since the 1990s, and new directions for policy action in the 21st century as society understands. **ISP:** ENS, STS

PSC 272 - The Environment, Energy, and US Politics

Course Units: 1.0 Examination of how politics and policymaking affect the air we breathe, the water we drink, and the land we live on. This course will explore key U.S. environmental issues and their scientific underpinnings as well as the connections between these issues and our collective use of natural resources. The course will review major pieces of federal environmental law in the United States and address the policy considerations, justifications, and regulatory frameworks underlying them, as well as the effectiveness of these laws in achieving a healthier environment. The course will also examine the respective roles of Congress, the executive agencies, and the courts in determining environmental policy. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, STS

PSC 282 - Health Politics and Policy

Course Units: 1.0 This course will examine the subject of health care policy in the American political system. Students will learn about the roles and functions of key actors, institutions, concepts, and principles as part of a broad overview of American health politics. From this foundation, we will develop a theoretical and practical framework to ground our analysis of current health policy issues and debates. Topics will include finance, insurance, Medicare/Medicaid, the Patient Protection and Affordable Care Act (aka "Obamacare"), prescription drug regulation, private markets, the public interest, ethics, and the role of government. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, WAC **ISP:** AMS, STS

PSC 283 - Social Movements, the Environment and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among

these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** SOC 270 **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **ISP:** AMS, ENS, STS

PSC 302 - U.S. Energy Policy

Course Units: 1

Considers the protections afforded to individual rights and liberties by the U.S. Constitution and the Bill of Rights. Topics include freedom of speech and assembly, the right to privacy, religious freedom, equal protection and discrimination, and the due process rights of those accused of crimes. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **Cross-Listed:** ENS 302 **Prerequisite(s):** PSC 111 or PSC 112
CC: SOCS, JCHF, JSPE **ISP:** AMS, ENS, STS

PSC 346 - Technologies in Society: Power, Politics and Economy across Industrial Revolutions

Course Units: 1.0 With the advent of the internet, robotics, Big Data, artificial intelligence and machine learning, we are already well into a Third (some say 'Fourth') Industrial Revolution. If history is any guide, this industrial revolution is transforming society, politics and culture in ways both overt and subtle. Further, as it diffuses, it will not be replicated identically across time and space. This course compares the first, second and third industrial revolutions - selectively focusing on the advent of factories/machines, mass production and information technologies, respectively. For each revolution, the course asks three questions 1) how value is created, 2) who controls and benefits from the new modes of production and consumption, and 3) how it transforms and is transformed by its social and political contexts. Second, it explores variation across different national political economies, most prominently in the advanced countries of England, the US, Europe and Japan, with selective comparisons to other developing countries, including China today. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, GCHF, GSPE **ISP:** STS

PSC 349 - Seminar: Comparative Politics

Course Units: 1.0 Selected topics in comparative politics. Content will vary from year to year. Preference to junior and sophomore political science majors. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, WAC **ISP:** STS

Psychology

PSY 210 - Neuroscience: Mind & Behavior

Course Units: 1.0 Basic concepts of brain functioning as they relate to psychological phenomena. Including methodology, neuroanatomy, and neurotransmission, important for understanding the mediation of behavior. **Cross-Listed:** BIO 210 **Prerequisite(s):** PSY 100 or (BIO 103 and BIO 104) **CC:** SET **ISP:** STS

PSY 215 - Health Psychology

Course Units: 1.0 This course will examine psychology's role in the etiology, prevention, progression, and treatment of disease. Topics will include mechanisms by which stress and health-related behaviors such as diet, exercise, smoking and substance abuse contribute to illness, doctor-patient communication, problems of medical compliance, cognitive/behavioral treatment techniques, pain management, and health promotion/ disease prevention strategies. **Prerequisite(s):** PSY 100 **ISP:** STS

PSY 242 - Death and Dying

Course Units: 1.0 This course will examine the social and psychological processes that shape the dying and bereavement process. The historical and cultural factors that influence attitudes toward dying and the ethical issues that impact decisions about how we die will be discussed. In addition, this course will discuss end of life care, including hospice, palliative care and pain management; how our health care system treats the dying; mental health interventions; and suicide. There are no prerequisites for this course. **CC:** JSPE, WAC **ISP:** STS

Sociology

SOC 226 - Medical Social Work

Course Units: 1

An overview of the social work role in health care settings as an advocate, practitioner, and leader within interdisciplinary teams. A comprehensive view of the professional values, theories, and methods that social workers utilize in this role to provide advocacy, individual, family and group counseling, educate patients and families, effective crisis intervention, resource referrals and influence public health policies.
Prerequisite(s): SOC 100 **CC:** SOCS **ISP:** STS

SOC 228 - Sociology of Medicine

Course Units: 1.0 Sociological perspectives on health, illness, the health professions and institutions, including studies of the social components of disease and its distribution, doctor-patient relations, and alternative health-care systems.
Prerequisite(s): SOC 100 **CC:** SOCS **ISP:** STS

SOC 270 - Social Movements, the Environment, and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** PSC 283 **Prerequisite(s):** SOC 100 **ISP:** AMS, ENS, STS

SOC 284 - Sociology of Women & Health

Course Units: 1.0 A critical introduction to the sociological analysis of issues in women's health in the contemporary United States, emphasizing how the key variables of gender, race & class structure access to health & well-being for women in our society. **Prerequisite(s):** SOC 100 **ISP:** AMS, GSWS, STS

SOC 359 - Environmental Policy and Resource Management

Course Units: 1.0 An examination of environmental issues and problems such as acid rain, ocean dumping, and nuclear wastes, and the social forces that shape environmental policies. Students complete an internship with an environmental service theme. **CC:** SOCS **ISP:** ENS, STS

SOC 370 - Public Health

Course Units: 1.0 An overview of public health with emphasis on the impact of large-scale social and cultural forces on the health of the public. The epidemiology of selected diseases, injuries, and the addictive disorders; the health effects of exposure to environmental and work place toxins; the role of nutrition in health. **ISP:** ENS, STS

SOC 372 - Global Health

Course Units: 1.0 An in-depth survey of health care systems and topics from a cross-cultural perspective, of particular interest to health care providers and practitioners and to students interested in comparative health care systems particularly those planning to go on the Health Systems Term Abroad. **ISP:** STS

SOC 374 - Mental Health and Society

Course Units: 1.0 A general introduction to the social scientific study of mental health. Topics include theories of mental illness, epidemiology of mental illness, the social experience of being a mental patient, and contemporary issues in mental health. **CC:** SOCS **ISP:** STS

Science ,Technology, and Society Minor

In addition to taking STS 101 , students wishing to minor in STS must take five other courses from the online list, drawn from at least three different departments. Furthermore, no more than three of the courses that count towards the STS minor may be numbered 0XX or 1XX (students must take at least three courses at the 200-level or beyond that count towards the STS minor).

Science, Medicine, and Technology in Culture (ID), B.A.

Requirements for the Interdepartmental Major:

The interdepartmental major will consist of eight courses: all students will take one of five introductory SMT courses, HST 138, HST 293, PHL 232,SMS 123 , or SOC 228, as well as a two-term interdisciplinary senior thesis. If the other half of the interdepartmental major is in Sciences or Engineering, then these students will do a three-course concentration in either history and political science, economics, sociology and anthropology, or philosophy, with all of these classes drawn from the list of SMT courses below, as well as three other courses from this list. If the other half of the interdepartmental major is in Humanities or Social Sciences, then these students will take three courses in Engineering and Science, each of which must count for the major of the respective Engineering or Science department, as well as three SMT courses from the list below.

SMT/STS Courses

Core Courses (1 course)

STS 101 - Intro to Science, Technology, and Society

Course Units: 1 This course introduces students to the range of methodologies, epistemologies, topics, and concerns central to the fields of Science, Technology, and Society (STS). How do scientific concepts develop, take root, and evolve? What range of roles do scientists and engineers play as they interact and intersect with broader societies? How might scientific practice and theory affect public planning and discourse? What are the social, political, anthropological, moral, religious, philosophical, and ethical dimensions of technosciences complex roles in human cultures and societies? These are some fundamental questions that we will explore together in this survey course, which is a team-taught class offered by three or four of Union Colleges faculty members. **CC:** GCHF, GETS **ISP:** STS

Capstone Course

STS 498 - Science, Technology, and Society Senior Thesis 1

Course Units: 0.0

STS 499 - Science, Technology, and Society Senior Thesis 2

Course Units: 2.0 **CC:** WS

Electives

Anthropology

ANT 230 - Medical Anthropology

Course Units: 1.0 An examination of beliefs about illness, healing, and the body and how these are shaped by culture and society. Topics include healing practices across cultures, political forces shaping medical practice in the U.S., and birthing practices in different cultures. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** GSW,STS

ANT 234 - Health and Healing in Africa

Course Units: 1.0 This course will explore the diversity of health-related beliefs and practices across Africa. We will firmly situate perspectives and approaches to health and illness within a broad sociocultural and historical context, also helping to challenge stereotypes associated with the continent. By cultivating a deeper knowledge of how African communities perceive and treat afflictions as well as international responses to health crises (e.g. Ebola), we will develop a cross-cultural perspective that expands our understanding of global, as well as local, health and healing. **CC:** LCC, SOCS **ISP:** STS

ANT 240 - Technology, Culture & Society

Course Units: 1.0 Examines the role of technology in cultural change and the role of culture in technological change. Particular attention will be given to: the Internet and other so-called "virtual community" formations, graphic design and other media, "reality" TV, cross-cultural advertising, and popular music. **CC:** LCC, SOCS **ISP:** FLM, GSWS, STS

ANT 241 - Environmental Anthropology

Course Units: 1.0 This course examines anthropological approaches to the environment and environmentalism. It asks questions such as: How does culture shape our perception of nature? What can conflicts over environmental protection, natural resources and human manipulations of natural materials tell us about contemporary societies? What does it mean to call an issue "political" or "cultural," versus "scientific" or "technical"? Students will develop the critical analysis skills to examine the natural world as a site of cultural politics, using anthropological concepts to examine environmentalism in diverse geographical and historical settings, including the Amazon, the Niger Delta, the suburban mall, and the Union campus. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** ENS, STS

ANT 258 - Anthropology of Media

Course Units: 1.0 How do communications media reshape ourselves and the worlds we inhabit? This course examines the influence of media on contemporary society. It focuses on identity formation and the different ways that scholars have approached the relationship between media and our taken-for-granted norms, practices, and beliefs. Readings draw from a wide range of disciplines and intellectual traditions, including cultural studies, critical media theory,

critical race studies, feminist studies and communication. However, the fundamental approach is anthropological. Our aim is to understand how everyday media practices relate to larger issues of personal, social and cultural identity. To this end, the class moves back and forth between theory and ethnography so that students develop both a sense of key questions in the field and an idea about how to answer them. **CC:** SOCS, WAC, GCHF, GSPE **ISP:** STS

ANT 272 - Psychological Anthropology

Course Units: 1.0 This course examines the influence of culture and society on individual psychology. Readings and class discussions examine the history of the way anthropologists have thought about the relationship between culture and personality. Issues examined will include: Do cultures produce and favor distinctive personality types? How is mental illness shaped by cultural beliefs and social practices? Are there distinctive "culture bound syndromes" and, if so, what produces them? Do cultures provide tools to help individuals adjust to crises? Do some cultures do this better than others? Are emotions fundamentally the same across cultures or does emotional experience vary significantly with culture? Is there a culture of psychiatry in the US? How do our cultural assumptions and our pharmaceutical industries shape our views of personality and mental illness? Cases will be drawn from Oceania, Asia, North America, and the Middle East. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AIS, GSW, STS

Art History

AAH 115 - Leonardo da Vinci: Science, Art, and Technology in the Early Modern Era

Course Units: 1.0 This course explores the history of science and technology during a fascinating and complex period when "modern" sciences and engineering are just beginning to emerge in Western Europe. Our focus will be on the artist and thinker Leonardo da Vinci, whose writings, drawings and other works of art provide a vivid picture of the state of imagination, observation, and the pursuit of scientific and technological knowledge, both theoretical and practical, during a time of great change. Leonardo's remarkably varied interests will allow us to study a wide range of subjects, from botany, optics and astronomy to hydraulic, civil and military engineering; from mining and metallurgy to anatomy and medicine; from diving bells to flying machines. This course has no prerequisites. **CC:** HUM, LCC, WAC **ISP:** STS

AAH 205 - The Art and Science of Painting

Course Units: 1.0 A historical and chemical grounding in the topic of painting and its impact on society, with a focus on the 14th to the 17th centuries. Topics include inorganic and organic pigments and binders used in late medieval workshops, fresco painting, the tempera tradition, and oil painting in the Renaissance (properties of oil, mixing pigments, glazing, drying). Students will work with primary sources and secondary literature, and engage in laboratory experimentation. **Cross-Listed:** CHM 090 **CC:** SET, HUM **ISP:** STS

AAH 265 - Environmentalism and Globalization in Contemporary Art

Course Units: 1.0 This course examines artistic practices that meld science, aesthetics, and politics in imaginative and critical ways as they address environmentalism and globalization. The course primarily focuses on 21st century artists whose work takes on such subjects as pollution, biodiversity, sustainability and climate change. We will consider the blurring of the boundaries between art and activism and the many art genres and strategies used to address these issues from photography and sculpture to community collaborations and public art. **CC:** HUM, GCAD, GCHF, GSPE **ISP:** AMS, ENS, STS

Astronomy

AST 050 - The Solar System

Course Units: 1.0 An introductory but detailed discussion of the solar system with special emphasis on the application of physics and the measurement of fundamental properties. Topics include the contents of the solar system (earth, moon, sun, planets, asteroids, comets), formation of the solar system, evolutionary processes (cratering, volcanism, tidal effects), extrasolar planetary systems, and possibilities of life on other planets. Labs will be performed in which students learn how to find and observe the planets and measure fundamental properties. No background in mathematics or physics required. **Corequisite(s):** AST 050L **CC:** SCLB, SET, GNPS **ISP:** STS

AST 058 - Astrobiology: Life in the Universe

Course Units: 1.0 Does life exist elsewhere in the universe, or are we alone? The emerging science of astrobiology attempts to answer this fundamental question using an interdisciplinary approach rooted in biology and astronomy. This course will examine the current state of our scientific knowledge concerning the possibility of life elsewhere in the universe. Topics include: the nature and origin of life on Earth, the possibility of life on Mars and elsewhere in the Solar System, the search for extrasolar planets, the habitability of planets, and the search for extraterrestrial intelligence. **CC:** SET **ISP:** STS

Biology

BIO 050 - Topics in Contemporary Biology

Course Units: 1.0 Recent developments in biology are pertinent to human health and to concerns of the nature of life and of human social values. This course will focus on human genetics, human genetic diseases, the genetic component of other diseases, the genetics of cancer, and the immune system. **Corequisite(s):** BIO 050L **CC:** SCLB **Lecture/Lab Hours** One lab every other week. **ISP:** STS

BIO 058 - Astrobiology

Course Units: 1.0 Does life exist elsewhere in the universe or are we alone? The emerging science of astrobiology attempts to answer this fundamental question using an interdisciplinary approach rooted in both biology and astronomy. This course will examine the current state of our scientific knowledge concerning the possibility of life elsewhere in the universe. Topics include the nature and origin of life on Earth, the possibility of life on Mars and elsewhere in the solar system, the search for extra solar planets, the habitability of planets, and the search for extraterrestrial intelligence. **Cross-Listed:** AST 058 **CC:** SET **ISP:** STS

BIO 077 - Technology of Biology

Course Units: 1.0 Advances in technology have been utilized by scientists and physicians for many centuries. Today, with the rapid developments in molecular biology, the technology often outpaces the understanding and acceptance of the public. This course will look at technological advances relating to biology from both a historical and modern perspective, with an emphasis on how molecular biology has revolutionized our lives. Medical, environmental, and industrial topics will be included. **Prereq/Corequisite(s):** Not open to students that have already completed BIO 103 or BIO 104 **CC:** SET **ISP:** STS

BIO 094 - Understanding Cancer

Course Units: 1.0 Everyone has been touched at some point in their lives by cancer. This course aims to provide insight into the fundamental concepts involved in the life cycle of a cell, how cancer is related to those processes, and how

those fundamental processes have led to advances in cancer treatment. **Prereq/Corequisite(s):** Not open to students who have already completed BIO 103 or BIO 104 **CC:** SET **ISP:** STS

BIO 243 - Bioinformatics: Information Technology in the Life Sciences

Course Units: 1.0 The disciplines of biology and information technology are intersecting with increasing frequency, most notably in the emerging field of bioinformatics. Bioinformatics has been fueled by the advent of large-scale genome sequencing projects, which has generated enormous sets of "mineable" data representing an invaluable resource for biologists. Biology and computer science students in the course will gain a working knowledge of the basic principles of the others' discipline and will then collaborate together in class on bioinformatics projects. Topics include pairwise and multiple sequence alignments, phylogenetic trees, gene expression analysis, and personalized medicine. **Cross-Listed:** CSC 243 **Prerequisite(s):** BIO 205 or a C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , or CSC 108 **CC:** SET **ISP:** STS

Chemistry

CHM 060 - Meals to Molecules

Course Units: 1.0 What is a healthy diet? This course will discuss human nutrition from a molecular perspective. Readings from the textbook and laboratory exercises will familiarize the student with the components of foods and how these components are used by the human body. In addition, the course will examine the benefits and pitfalls of supplementation of the diet with vitamins, etc., and discuss how to interpret health claims. **Corequisite(s):** CHM 060L **Prereq/Corequisite(s):** Not open to students who have completed CHM 101 or CHM 110H , or have AP credit in chemistry. **CC:** SCLB **ISP:** STS

CHM 080 - Culinary Chemistry

Course Units: 1.0 This culinary-themed course is an introduction to the chemistry involved in food preparation and cooking. The course will include lecture and a laboratory experience with inquiry-based exercises in both the traditional chemical laboratory setting and a typical kitchen setting. Topics include the chemical make-up of the food we eat, the relationship between structure and flavor, and how chefs exert exquisite control over chemical reactions to create the flavor and texture of a gourmet meal. **Prereq/Corequisite(s):** Not open to students who have completed CHM 101 or CHM 110H , or have AP credit in chemistry. **CC:** SCLB **ISP:** STS

CHM 090 - The Art & Science of Painting

Course Units: 1.0 A historical and chemical grounding in the topic of painting and its impact on society, with focus on the 14th to 17th centuries. Topics include inorganic and organic pigments and binders used in the late medieval workshop, fresco, the tempera tradition, and oil painting in the Renaissance (properties of oil, mixing with pigments, glazing, drying). Students will work with primary sources and the secondary literature, and engage in laboratory experimentation. **Cross-Listed:** AAH 205 **CC:** SET, HUM **ISP:** STS

Classics

CLS 153 - The Environment in the Ancient World

Course Units: 1.0 Students will discover how ancient Mediterranean societies interacted with the natural world, as revealed by history, art and literature, and archaeology. Some of the questions we will investigate include: how did the Mediterranean environment affect and determine everyday life, both in cities and in rural areas? How did ancient societies manage their food supply? What was their view of nature? How did they react to ecological crisis? And,

finally, how can we use their outlook on and treatment of the environment to inform our own approach? **CC:** HUM, LCC, GCHF **ISP:** ENS, STS

CLS 190 - Science and Technology in the Ancient World

Course Units: 1.0 This course is an introduction to the scientific and technological developments during the Greek and Roman periods. Students will deepen their understanding of the scientific method, acquire skills in its application in the evaluation of evidence, and learn about the impact of science and technology on ancient civilization. The time periods covered in this class will stretch from Bronze Age of Greece to the Late Roman Empire. This course will discuss a broad range of scientific and technological topics. Students will learn about this crucial aspect of antiquity predominantly through the reading of original sources in translation. Because of the diverse nature of the topics, the authors will range greatly, including such authors as Hesiod, Pliny the Elder, and Frontinus. Students will be expected to draw conclusions from the primary source material as well as connect the ancient texts to other scholarly readings. The secondary reading will be drawn from a variety of academic disciplines, including classics and history of science. Ultimately, students will gain a better understanding of the role that ancient technological and scientific developments have had in their own world. **CC:** HUM **ISP:** STS

CLS 192 - Ancient Medicine

Course Units: 1.0 This course explores the Greek and Roman roots of Western medicine. How did the Hippocratic writers, Galen, and other physicians understand and treat the ailments of patients? And what did it mean, in the first place, to be a physician or a patient two millennia ago. **CC:** HUM **ISP:** STS

CLS 193 - History Done Digitally

Course Units: 1 What do you think of when you hear "Humanities"? If you ask someone in the humanities what they study, you may hear a hundred different answers: great authors, established historians, artistic masterpieces. You seldom hear "Data." But that is exactly what all of these works are. In the modern world, countless tools have been developed to facilitate the access, analysis, and dissemination of data. In this course, we will learn how to use various technologies to both ask and answer questions traditional to the humanities and come up with new ones, with a focus on the ancient and medieval world. **Cross-Listed:** HST-140 **CC:** HUM, QMR, GDQR **ISP:** STS

Computer Science

CSC 055 - Working with the Web

Course Units: 1.0 Design, writing, and publishing of WWW pages; creation of graphical images; study of the underlying Web technologies such as communication protocols, digital encoding and compression; programming of Web pages. **CC:** SET **ISP:** STS

CSC 080 - History of Computing

Course Units: 1.0 A survey of tools for computation, from number systems and the abacus to contemporary digital computers. The course focuses on the development of modern electronic computers from ENIAC to the present. Study of hardware, software, and the societal effects of computing. **Cross-Listed:** HST 292 **CC:** SET **ISP:** STS

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes

development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 104 - Robots Rule! Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a robotics theme. Introduces students to algorithms, basic data structures, and programming techniques. Students will build and program robots, exploring mobility, navigation, sensing, and inter-robot communication. Additional class topics include: history of robotics, social and ethical issues, emotionally intelligent behavior and other current topics in robotics. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 105 - Game Development: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a computer games theme. Introduces students to algorithms, basic data structures, and programming techniques. Computer game development is used as an example application area and students implement their own games throughout the course. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area, focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 108 - Scientific Computing: Introduction to Computer Science

Course Units: 1.0 Computers are used as tools in analyzing and solving scientific problems as well as being embedded in many applications and experimental equipment used by today's scientists. This course is designed to introduce students to computer programming and problem solving through the use of Python. Python is a language commonly used by the scientific community, and we will focus on using it to address scientific problems, using extensions that facilitate scientific computing. CC: QMR, SET Note: A grade of C- or better is required in order to take any course

that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 240 - Web Programming

Course Units: 1.0 This course addresses the standards in programming applications for the Web. It covers the client-side technologies HTML, CSS, and JavaScript as well as server-side technologies PHP and MySQL. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 **CC:** SET **ISP:** STS

CSC 243 - Bioinformatics: Information Technology in the Life Sciences

Course Units: 1.0 Biology and computer science students will gain a working knowledge of the basic principles of the others' discipline, and will collaborate together on bioinformatics projects. Topics include pairwise and multiple sequence alignments, phylogenetic trees, gene expression analysis, and protein structure prediction. Additional topics will be presented by invited speakers. **Cross-Listed:** BIO 243 **Prerequisite(s):** BIO-205 **or** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 ,or CSC 108 . **CC:** SET **ISP:** STS

CSC 245 - The Computer Science of Computer Games

Course Units: 1.0 This course surveys the field of computer science from the perspective of computer games. Topics explored include: rendering of graphics to a screen, implementation of realistic simulation, use of artificial intelligence in games, handling user input, game physics, collaborative development. Final course project is a complete computer game. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 . **CC:** SET **ISP:** STS

Economics

ECO 134 - Data Visualization

Course Units: 1.0 The digital world we live in generates vast amounts of data. This data has the potential to help us understand the world and make better decisions. This course is about representing data using the visual domain. We learn how to turn gigabytes of numbers into pictures and interactive displays. We will use the visual domain not only for communicating insights but also as a means of analysis. We will learn about data structures (how to connect to data), data aggregation (how to summarize data), and principles of design (how humans consume visual content). We will apply these concepts to business and economic data, including sales, financial performance, pricing, etc. The emphasis is on hands-on exercises and creation of new visualizations using data visualization software Tableau. **CC:** SOCS, JDQR **ISP:** STS

ECO 228 - Environmental and Natural Resource Economics

Course Units: 1.0 Economic causes of environmental degradation and natural resource depletion; benefit-cost analyses of public policies for environmental protection and natural resource preservation; specific issues in energy and wilderness resource management, air and water pollution abatement, and solid waste management. **Prerequisite(s):** ECO 101 or permission of instructor. **CC:** SOCS **ISP:** STS, ENS

ECO 332 - Economics of Technological Change

Course Units: 1.0 The course will cover both macro and micro aspects of technological change. Topics include: Exogenous growth models, innovation-driven Schumpeterian growth models, creative destruction and the economy, competition and market structure, valuation of Research and Development (R&D) and patents, patent litigation and

enforcement of Intellectual Property Rights (IPRs), innovation, technology diffusion in the global economy, and design of IPR regimes and R&D policies. **Prerequisite(s):** ECO 241 or ECO 242 **CC:** SOCS **ISP:** STS

ECO 335 - Economics of Health

Course Units: 1.0 Examination of demand and supply for medical personnel; analysis of hospital cost, inflation, and health insurance. Discussion of issues in cost benefit analysis of public health and regulation of health care markets. **Prerequisite(s):** ECO 241 and ECO 243 , or permission of the instructor. **CC:** SOCS **ISP:** STS

Engineering Science/Engineering

ESC 100 - Exploring Engineering

Course Units: 1.0 An introduction to engineering including fundamental topics core to engineering. The course includes a weekly design studio that emphasizes engineering design, teamwork, technical writing and ethics through several individual and team design projects. Not available to junior or senior engineering students. **Corequisite(s):** ESC 100L **CC:** SET, GETS **ISP:** STS **Note:** General engineering course common to more than one program.

ESC 104 - Geographical Mechanism Synth

Course Units: Early engineers relied on intuition and graphical techniques to design mechanisms throughout history, this course explores these graphical techniques. Many of these techniques are still in use today to provide insight into engineering problems and to solve contemporary challenges. The course also explores multiple techniques used to develop innovative mechanismdesigns. The course is appropriate for non-engineering, non-science, and engineering majors alike. As part of the course, students will identify a challenge they encounter and will be lead through the human centered design process to create a functional prototype of the solution. **CC:** GETS **ISP:** STS

English

EGL 140 - Introduction to Digital Studies: Digitizing the Past

Course Units: 1 The digital age and the medieval period-two disparate phases of history-may at first blush appear to have nothing in common. Yet, as medieval scholars have shown, this myth is best dispelled in and through the medieval manuscript, a physical object representing the convergence of text and technology in its earliest form. Using the medieval manuscript as a case study, this class will introduce students to digital topics such as online storytelling, digital archives and curation, online exhibits, data interpretation, and more. Along the way, students will learn skills of technical literacy, written analysis, and archival interpretation using programs such as Omeka, Artsteps, Audacity, Voyant Tools, and StoryMaps. **Cross-Listed:** SMT 140, AAH **CC:** HUL, WAC, HUM

EGL 276 - Literature of the Manor House

Course Units: 1.0 In this course we will investigate the rich and complex history of the genre of English manor house fiction. Focusing on texts ranging from Jane Austen's *Northanger Abbey* and E. M. Forster's *Howards End* to Kazuo Ishiguro's *The Remains of the Day*, Sarah Waters' *The Little Stranger*, and Ian McEwan's *Atonement*, we will explore issues of gender, sexuality, race, and especially class in both course readings and class discussions. Furthermore, we'll examine a number of filmic representations of British country house life, including Robert Altman's *Gosford Park* and Julian Fellowes' *Downton Abbey*. In addition to crafting course papers, students will have the option to research, create, and showcase their own multi-media projects exploring virtual manor homes via a range of freely downloadable programs and platforms. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD, JLIT **ISP:** GSW, STS

EGL 279 - Literature and Science

Course Units: 1.0 An interdisciplinary examination of the interactions between literature and science. Topics will vary from year to year and may include science writing, the representation of science and scientists in literature, literature inspired by science, literature and science as competing ways of knowing the world, the figurative dimension of scientific writing, and speculative fiction. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, STS

EGL 280 - Nature and Environmental Writing

Course Units: 1.0 This course will focus on the traditions of nature and environmental writing in the American context, with an emphasis on the social and cultural dynamics of the environment and environmental action. Among other questions, we will ask ourselves: How do class, gender, and race enter into the nexus of social interactions that shape our environment? What is the place of literature in community, literacy, and environmental activism? What are the connections between the ways we speak and write about the environment and our actions toward the environment? How does the wilderness concept affect the ways citizens have access to public spaces? We will consider the concept of "nature" as we move through the course, culminating (if you like) with some nature writing of your own. Readings may include Thoreau; Carson; Leopold; Kingsolver, and selections from *Reading the Roots: American Nature Writing Before Walden*; *Colors of Nature*; Lauret Savoy, T*race: Memory, History, and the American Landscape*; and F. Marina Schauffler, *Turning to Earth: Stories of Ecological Conversion.* **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, ENS, STS

EGL 281 - Environmental Psychology and the American Literary Landscape

Course Units: 1.0 Environmental research psychologist Maria Vittoria Giuliani emphasizes that human-to-place attachments "not only permeate our daily life but very often appear also in the representations, idealizations and expressions of life and affect represented [in] literature." Indeed, many literary works emphasize humanity's basic attachment needs and the importance person-to-place bonds have in the development of the human psyche. American fiction writers frequently employ descriptions of American landscapes as inspiration for character and plot development, and American nature writers often emphasize the way in which wilderness environments may influence one's mental and physical health and emotional well-being. In fact, recent studies in the field of cognitive neuroscience provide empirical evidence to substantiate the theory that exposure to a natural environment may actually generate structural changes in the brain by increasing oxygenation and blood flow that occur in response to neural activity. Hence, this course will employ contemporary studies in place attachment, environmental psychology, and cognitive neuroscience to examine the way in which various literary works illustrate the important role environment plays in aiding or obstructing one's ability to think, reason, remember, problem-solve, process information, use language, or be creative. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, ENS

EGL 284 - Interactive Fiction Workshop

Course Units: 1 Interactive fiction is storytelling that uses technology to create an interactive "reading" experience, requiring the reader to make choices that influence the plot. In this course you are going to read, critique, and create interactive fiction. You'll develop your storytelling skills, and along the way you'll learn some programming concepts, and history of narrative. video games. We'll also consider how race, gender, class, sexuality, and (dis)ability shape our experiences of these games as players and writers. No previous CS experience is necessary. Students will need access to a laptop for class. **Cross-Listed:** CSC 084 **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of instructors. **CC:** HUL, HUM, SET, WAC, JCAD, JETS, JLIT **ISP:** AMS, GSW, STS

EGL 306 - Jr. Seminar (Spring): The Beatles, Motown, and Taylor Swift

Course Units: 1.0 This is a course on the cultural politics of popular music. Since pop music is, by definition, ephemeral - shaped by and to some degree shaping the attitudes of a particular time and place - it can offer insights into what those attitudes were. On the contrary, some pop music transcends its cultural milieu, thus revealing something deeper about our culture in general. The Beatles, the most influential and still the most popular band of the rock era, offer one example; the musicians of Motown and other predominantly African-American recording platforms like Stax-Volt, without whom there would be no Beatles, offer another. After examining the lasting contributions of these artists as a foundation, we will, in the last weeks of the term, look at more contemporary pop musicians and their impact. Taylor Swift will be the focus, but students may nominate their own candidates (Beyonce? Rihanna? The Replacements?) for pop immortality and impact as well. **Prerequisite(s):** One 100-level and two 200-level English courses or instructor's permission. **CC:** HUL, HUM, WAC-R **Note:** No musical knowledge is required for this course. An ability to keep time and notice stand-out musical elements (key modulations, odd or interesting chords) would be useful but is not required. If you can play a bit, though, feel free to do so.

Environmental Studies

ENS 100 - Introduction to Environmental Studies

Course Units: 1.0 An introduction to environmental studies from a scientific, policy, and engineering perspective. This course covers human-environment interactions, with a focus on the impacts of human activities on natural systems such as climate, air, water, and species diversity and the ensuing environmental injustice. The course discusses sustainable solutions for how we can build systems that will support billions of humans and the natural world. Fieldwork during lab periods involves the investigation of local environmental problems and solutions. This course is intended for first- and second-year Environmental Science and Environmental Policy majors, but it is open to all students. **Corequisite(s):** ENS 100L **CC:** SCLB, GNPS **ISP:** ENS, STS

ENS 204 - Geographic Information Systems

Course Units: 1.0 An introduction to Geographic Information Systems (GIS) technology and its practical uses. Topics include history of GIS, geographic data types, primary data structures, system design, map coordinate systems, data sources, metadata, census data, geographic coding and address matching, digitizing, remote sensing imagery, measures of data quality, and needs assessment. An emphasis will be on hands-on instruction using GIS software (ArcView). Students will work with ArcView throughout the term to complete assignments and a class project. Focus areas include archeology, electric and gas utilities, surveying, health and human services, insurance, law enforcement and criminal justice, media and telecommunications, transportation, water and wastewater, and natural resources. The ultimate goal is to use the spatial component of data in conducting analysis and making decisions. **Prerequisite(s):** A good background in the use of modern computer software. **Corequisite(s):** ENS 204L **CC:** SET, GETS **Lecture/Lab Hours** Two class hours and two lab hours weekly. **ISP:** ENS, STS

ENS 208 - Waste Management and Recycling

Course Units: 1.0 This course will introduce students to various sources of solid waste materials including hazardous and nonhazardous waste, and biodegradable and non-biodegradable waste. Focus areas are overview of landfill systems, geosynthetics, geotextiles, geomembranes, geonets, single clay liner, single geomembrane liner, composite liner systems, leak detection and leachate collection, removal and treatment of leachate, and capping and closure systems. The recycling segment will explore natural resources of raw materials including origin and use. It will also investigate the potential and limitation for recycling of materials. The focus area will be various applications of recycling recyclable and nonrecyclable materials especially non-biodegradable waste. Discussion of methods of manufacture and compositions of such materials will concentrate on advanced industrial applications for the reuse of non-recyclable waste materials. Application areas include production of new materials, materials with superior qualities for special purposes, and materials with high level of resistance against certain environmental conditions. The course will also touch on the political aspect of recycling including consumer attitude and government incentives to encourage recycling. **Prerequisite(s):** ENS 100 or GEO 110 **CC:** SET, GETS **ISP:** ENS, STS

ENS 209 - Renewable Energy Systems

Course Units: 1.0 The study of renewable energy resources and the conversion technologies available to utilize them to meet society's energy needs. Topics include forms of energy; First and Second Laws of Thermodynamics; energy conversion and efficiency; sustainability; energy storage. Historical perspective on world and U.S. energy usage, conversion technologies, and energy resources. Fundamentals of the conversion processes and systems involved in the use of solar thermal and photovoltaic, wind, bioenergy, geothermal, thermoelectric, hydro and ocean technologies. The use of hydrogen as a fuel and technologies to produce and use it. Economic and environmental issues relevant to renewable energy resources. Class will be supplemented with laboratory demonstrations and field trips to visit existing renewable energy systems. **Prerequisite(s):** MER 231 or PHY 122 **Corequisite(s):** ENS 209L **CC:** SET **ISP:** ENS, STS

ENS 222 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** MLT 209 **CC:** LCC, SET, HUM, HUL, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

ENS 247 - Sustainable Infrastructure

Course Units: 1.0 Infrastructure is the backbone of nations. It is a society's inventory of systems and facilities that allow it to function properly and smoothly. This includes, but is not limited to, roads, bridges, tunnels, dams, transit, waterways, ports, aviation, pipelines, transmission lines, rail, parks, and public buildings such as schools, courts, hospitals, and recreational and sport facilities. Infrastructure involves services such as energy, water supply, wastewater treatment, power and gas distribution grids, waste collection, and sewer disposal. Major advances in technology resulted in digital infrastructure that includes communication networks, signal transmission towers, data centers, information repositories, servers/computers, and the Internet. This course explores the progress humanity achieved in developing infrastructure facilities and the present move towards sustainability. Methods, materials, processes, technologies, practices, and operations required to maintain a healthy environment and efficient infrastructure will be examined. The intersection between policies necessary for sustainable infrastructure and political, economic, social, societal, and cultural factors will be emphasized. **CC:** SET, GETS **Lecture/Lab Hours** Four class hours weekly. **ISP:** ENS, STS

ENS 252 - Geoenvironmental Applications

Course Units: 1.0 This course introduces field applications related to soil and water. It explores the natural characteristics and testing of soil as a construction material and as a bearing layer. It covers seepage analysis, aquifers, and well fields. It details the components of containment systems for waste disposal to alleviate environmental pollution and contamination. It also presents the basics of water movement in closed conduits and in open channels, and the development of supply networks. For labs, students gain experience in utilizing industry-standard testing methods of the American Society for Testing and Materials (ASTM). Tests include soil classification, composition, flow and permeability, compaction, compressibility, strength, slope stability, and environmental geotechnology with focus on the Environmental Protection Agency's (EPA) design specifications. **Prerequisite(s):** MTH 112 or higher, and PHY 120 or higher. **Corequisite(s):** ENS 252L **CC:** SCLB **Lecture/Lab Hours** Three class hours and a weekly lab. **ISP:** ENS, STS

ENS 253 - Environmentally Friendly Buildings

Course Units: 1.0 Many energy consumption and adverse environmental effects are attributable to buildings and their use. In this course, through instructions, hands-on experience, computer simulation, and research, the students will become acquainted with the inner workings of the subsystems in buildings: foundations, framings, walls, sidings, roof, electrical systems, lighting, appliances, heating, air-conditioning, ventilation, indoor air quality, basement, crawl space, attic, water and moisture management; plumbing, flooring, finishes, furniture, insulation, xeriscaping, and LEED rating system. The students will become aware of indoor and outdoor environmental issues and the life cycle costs of the existing systems. They will also learn the latest science and technology to reduce the negative effect of these subsystems on the environment. Laboratory: hands-on experience with the above subsystems, site visits, Computer simulations, research, projects, and presentations. There are no prerequisites for this course and it is open to all students. **Corequisite(s):** ENS 253L **CC:** SET, GDQR, GETS, SCLB **ISP:** ENS, STS

ENS 277 - The Water Paradox

Course Units: 1.0 Fresh water is tasteless, odorless, and colorless. These characteristics make water one of the most intriguing materials. It is a necessity for life. A paradox involves features or qualities of contradictory nature. Water is notorious with such qualities. Water is one of the cheapest materials yet it is the most precious commodity known to humanity. Water could be the source of peace and development yet it could be a reason for war and conflict. Water could be a force for good to generate hydropower yet unchecked or unregulated this force could be in the form of destructive floods. Water could be a weapon to combat desertification yet too much thereof could cause erosion and failures. Floods come with loads of mud and silt that charge river deltas and keep them fertile yet weaker floods result in lesser deposits that could threaten river deltas with sea attacks. Water has always been a main reason for people to settle the land yet a shortage thereof could force people to migrate and leave their homeland. This course shows the role water played in the past, is presently playing, and will play in the future in defining communities and societies. **CC:** SET, GETS **ISP:** ENS, STS

ENS 291 - Construction for Humanity

Course Units: 1.0 An interdisciplinary introduction to the technology of construction and the social uses of building by humans. The course will consider types of building materials and their application to domestic housing, castles, cathedrals, palaces, monuments, dams, bridges, tunnels, factories, and office buildings. **Cross-Listed:** HST 291 **CC:** SET, GETS **ISP:** ENS, STS

ENS 299 - Environmental Forensics

Course Units: 1.0 An interdisciplinary course that will present topics detailing the intersection between the environment, ethics, law, society, litigation, policy, economics, pollution/contamination, cleanup, testing, standards, and sustainability. Sources of environmental problems are usually related to emissions, pollution, contamination, and/or waste disposal. Whether the cause is intentional or non-intentional, natural factors or a man-made disaster, or due to normal operation or accident, a crisis ensues and cleanup becomes necessary. This inevitably leads to legal actions and litigations that rely on experts in conducting scientific investigations to establish the facts surrounding potential controversies. Topics discussed in the course include liability, environmental site assessment, insurance litigation, toxic torts, science tools, sampling & measurements, statistical analysis, chemical fingerprinting, contaminant transport models, and environmental forensic microscopy. The course will illustrate the above points using case studies. **CC:** SET, GETS, WAC **ISP:** ENS, STS

ENS 302 - U.S. Energy Policy

Course Units: 1 Transitions to zero-carbon sources of energy are a critical part of addressing climate change globally. Within various parts of the United States, this transition has been slow and involved a number of political conflicts. Fossil fuel corporations, energy interest groups, and several other actors have fought over the direction of energy policy, with these battles largely occurring at the state and local levels. This class explores these relationships

and conflicts to understand the battles over a clean energy transition in the United States and the implications for addressing climate change. **Cross-Listed:** PSC 302 **CC:** SOCS **ISP:** ENS, STS

Geology

GEO 106 - Introduction to Oceanography

Course Units: 1.0 The oceans cover 71% of the planet, 97% of the earth's available water, and 50% of the planet's species, but more than 95% of the ocean remains unexplored. This course covers physical, chemical, and biological oceanography. The course involves an examination of plate tectonics, ocean currents and the forces driving them, the role of the oceans in climate change, coastal processes and sea level change, biological productivity, and the ocean fishing industries. **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 109 - Global Climate Change

Course Units: 1.0

Global climate change is the defining environmental issue of our time. The impacts of climate change disproportionally affect populations who have contributed the least to atmospheric greenhouse gas loading. This course will review the basis for the overwhelming scientific consensus that ongoing warming is not natural; topics include: the radiation balance of Earth, the role of greenhouse gases on Earth's surface temperature, atmospheric and oceanic circulation, and natural oscillators in the climate system. A significant portion of the course is dedicated to understanding natural climatic variability. Students will prepare and submit policy briefs to policy makers at the federal, state, and/or local level that outline ways to mitigate and/or adapt to climate change. Preference given to first and second year students. **Corequisite(s):** GEO-109L
CC: SET, GNPS **ISP:** ENS, STS

GEO 110 - Introduction to Geosciences

Course Units: 1.0 Examination of Earth materials and processes: How our dynamic planet works including plate tectonics, geologic age determination, processes that form the rocks we see at the Earth's surface, development of the stunning variety of landscapes we see, and other topics of contemporary interest including floods, underground water resources, coastal erosion, earthquakes, landslides, volcanoes, and climate change. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 110L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 112 - Environmental Geology

Course Units: 1.0 The increasing interplay between the environment and human activity has profound effects on our landscape and society. This course focuses on anthropogenic issues such as climate change, soil and groundwater contamination, traditional petroleum resource extraction and dependence, mineral and water resources, and alterative sources of energy. To understand how humans have perturbed the natural environment, it is critical to understand geologic principles and processes. The course also explores natural disasters including earthquakes, volcanoes, hurricanes, landslides, floods, and coastal erosion and their effects on different segments of society, as the impacts of natural disasters are affected by various socio-economic factors. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 112L **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 117 - Natural Disasters

Course Units: 1.0 An introduction to the geologic processes causing floods, earthquakes, volcanoes, landslides, and other natural hazards and how hazards affect people and society. The course will include discussion of major events in the geologic and historical record as well as future hazard potential. We will assess the risks humans face in different

regions, including local hazards, our contribution to geologic hazards, and how we can minimize and cope with future events. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 117L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 120 - The Story of Earth and Life

Course Units: 1.0 An investigation of Earth's dynamic history and evolutionary changes over the past 4.5 billion years. Topics include impacts of climate change, the evolution of life, major changes in the nature of Earth's atmosphere and oceans, and for major mountain building events that have affected the continents as well as the evolutionary development of plant and animal life as recorded in the geologic record. Specific topics include the origin of life, mass extinctions of dinosaurs and other organisms, paleoclimate, and the geologic history of New York State. The link between geology, chemical cycles and life is highlighted, as is the relation of past biogeochemical changes to current global environmental change. Field trips during lab investigate local geologic history and the course may require a weekend field trip. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 120L **CC:** SCLB, GNPS, SET **ISP:** ENS, STS

GEO 220 - Mineral Science

Course Units: 1.0 Mineral science is foundational for other geology and environmental science courses, as well as many other scientific disciplines that encounter crystalline solids. This class provides students with a solid understanding of minerals, which are the building blocks of all rocks on this and every other planet, and provide most of our industrial resources, many building materials and precious gems. A successful student leaving this class will be able to identify most common minerals when they occur "in the wild" and be familiar with their internal structure and crystal chemistry. The practical use of state-of-the- art analytical techniques common to the study of solid materials is emphasized to elucidate the links between internal crystalline structure and macroscopic physical properties. Students will use the scanning electron microscope, the x-ray diffractometer and the polarizing light microscope. In addition to learning the fundamentals of mineral science, students will gain appreciation for the beauty and symmetry present in the natural world. **Prerequisite(s):** CHM 101 or equivalent and any 100-level geosciences course. **Corequisite(s):** GEO 220L **ISP:** ENS

History

HST 138 - Big History

Course Units: 1.0 An exploration of the past from the big bang to the present, dividing the history of the universe, earth, life, and humanity into periods using very large scales of time. **CC:** SOCS, GCHF **ISP:** ENS, STS

HST 229 - The Adirondacks and American Environmental History

Course Units: 1.0 The Adirondack region of northern New York Slate has been a proving ground for shifting American attitudes toward the environment, from early colonial (ears of wilderness, to intensive resource exploitation, and to efforts to conserve natural resources and preserve distinctive wilderness areas. This course will examine Adirondack environmental history and place it in the context of broader American environmental history. It will leverage Union College's proximity to the region, and the resources of the Union College Kelly Adirondack Center, to offer students both intellectual and experiential engagement with the history of this distinctive place. **CC:** SOCS **ISP:** AMS, ENS, STS

HST 256 - Modern European Ideas

Course Units: 1.0 This course will survey important ideas in modern European history, including the writings of Jean Jacques Rousseau, Voltaire, Montesquieu, Adam Smith, Karl Marx, Charles Darwin, Friedrich Nietzsche, Sigmund

Freud, Albert Einstein, Jean-Paul Sartre, Simone de Beauvoir, and Michel Foucault. **CC:** SOCS, WAC, JCHF **ISP:** REE, STS

HST 258 - Nazi Science, Medicine, & Technology

Course Units: 1.0 This course is a history of how science, medicine, and technology interacted with Nazism, beginning with the background of the First World War and Weimar Republic, through the Third Reich, and continuing through to its legacy during the post-Second World War era. This story extends beyond Germany, both because of the international effects of this interaction, and through comparisons with science, medicine, and technology under other regimes and in other cultures. **CC:** SOCS, JCHF, JETS, WAC **ISP:** STS

HST 269 - Epidemics and Empire

Course Units: 1 Do epidemics have different values across the world? Whose bodies appear to be more contagious than others? What is the politics of the creation of these differences? This course will allow us to study the history of epidemics such as cholera, bubonic plague, influenza, HIV/AIDS across the modern world so that we can find answers to these questions: when did disease become racial, when did some deaths matter more than others, and why did these differences become so enduring that we saw them in the 21st century exposure to a pandemic, the Covid 19? **CC:** HUL, SOCS, WAC-R **ISP:** STS

HST 286 - Women in South Asia

Course Units: 1.0 This course takes a historical approach towards the topic of gender and sexuality in South Asia, with a particular, though not exclusive, focus on the history of women in the region. The course has three major goals: first, to analyze the colonial state and its policies with respect to women and gender relations; second, to study gender relations, women's voices and women's movements within the context of nationalist struggles in the post-colonial era; and third, to understand the complexities of trying to recover the "voice" of heterogeneous groups of women in South Asia, divided along lines of caste, class, region, occupation and religion. Study material will include academic texts, films and popular television from the subcontinent. **CC:** LCC, SOCS **ISP:** GSWS, STS

HST 291 - Construction for Humanity

Course Units: 1.0 An interdisciplinary introduction to the technology of construction and the social uses of building by humans. The course considers types of building materials and their application to domestic housing, castles, cathedrals, palaces, monuments, dams, bridges, tunnels, and skyscrapers. **Cross-Listed:** ENS 291 **CC:** SET, SOCS, GETS **ISP:** ENS, STS

HST 292 - History of Computing

Course Units: 1.0 A survey of tools for computation, from number systems and the abacus to contemporary digital computers. The course focuses on the development of modern electronic computers from ENIAC to the present. Study of hardware, software, and the societal effects of computing. **Cross-Listed:** CSC 080 **CC:** SET, SOCS **ISP:** STS

HST 293 - History of Medicine

Course Units: 1.0 This course offers a survey of the history of medicine in the Western world from the ancient Greeks to the present. We will consider several key moments in this history, such as the so-called "Greek miracle" in medicine (Hippocrates), the discovery of blood circulation (William Harvey), and the invention of bacteriology (Louis Pasteur and Robert Koch). In the last two class sessions we will focus more specifically on the history of psychiatry. All of the class readings are primary sources. **CC:** SOCS, WAC **ISP:** STS

HST 299 - The Nuclear Age

Course Units: 1.0 The nuclear age began with the discovery of radioactivity on the eve of the twentieth century and continues on to the present. The technology people have created to study and exploit the energy and particles released by nuclei, including nuclear weapons and nuclear power, but also many other applications in industry and medicine, have defined this age. This course will survey these economic, political, social, and cultural problems facing mankind: the proliferation of nuclear weapons, and human-induced climate change. **CC:** SOCS, GCHF, GETS, WAC **ISP:** ENS, STS

Interdisciplinary

ISC 203 - Exploring Healthcare Through Community

Course Units: 1 A field course combining supervised observation and/or community based learning experiences in various health care settings with the study of problems and means of health care delivery and the social determinants of health. Please see department for approval and application process. **CC:** WAC, JSPE **ISP:** STS

Mathematics

MTH 051 - Cryptology: The Mathematics of Secrecy

Course Units: 1.0 The course will focus on the mathematical aspects of public-key cryptography, the modern science of creating secret ciphers (codes), which is largely based on number theory. Additional topics will be taken from cryptanalysis (the science of breaking secret ciphers) and from contributions that mathematics can make to data security and privacy. **Note:** Not open to students who have passed (or have AP credit for) a college calculus course. **CC:** QMR **ISP:** STS

MTH 056 - History of Mathematics

Course Units: 1.0 Traces the development of mathematical ideas and methods in literate cultures from ancient Egypt and Mesopotamia, to Hellenistic Greece and medieval China, India and the Islamic world, up through the dawn of calculus at the start of the Scientific Revolution in early modern Europe. Topics include the interlinked changes and intercultural transmission of basic numeracy, arithmetic, geometry, trigonometry, algebra, practical computation and approximation, and concepts of the infinitely large and small. **Note:** Not open to students who have passed (or have AP credit for) a college calculus course. **CC:** QMR, JDQR **ISP:** STS

MTH 060 - Mathematics and Politics

Course Units: 1.0 A mathematical treatment (not involving calculus or statistics) of escalation, political power, social choice, and international conflict. No previous study of political science is necessary, but PSC 111 or PSC 112 would be relevant. **Note:** Not open to students who have passed (or have AP credit for) a college calculus course. **Cross-Listed:** PSC 123 **CC:** QMR **ISP:** STS

MTH 221 - Mathematical Cryptology

Course Units: 1.0 An in-depth look at the mathematical theory underlying modern methods to accomplish the secret transmission of messages, as well as other tasks related to data security, privacy, and authentication. **Note:** Not normally open to students who have passed MTH 235 or MTH 051. **Prerequisite(s):** MTH 199 or permission from the Chair. **CC:** GDQR **ISP:** STS

Modern Languages in Translation

MLT 209 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** ENS 222 **CC:** LCC, SET, HUL, HUM, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

MLT 208 - Chinese Medicine

Course Units: 1 This course covers the philosophical and practical origins of Chinese medicine to the political, social, and transnational realities of modern day research and practice. It examines qi, yin and yang, health and disease, as foundational concepts in the Chinese cultural worldview. The course provides an overview of different types of traditional medicine, and its focus on nourishing a healthy life, harmonious balance with self and nature. The course compares Chinese and Western approaches to disease and treatment, providing a more nuanced understanding of biomedicine and scientific inquiry. **CC:** HUM, LCC, WAC **ISP:** AIS

Philosophy

PHL 232 - Philosophy of Science

Course Units: 1.0 An introduction to philosophy of science. What are scientific theories, and how are they tested? What is scientific method? What counts as evidence for a scientific theory? What is scientific explanation? We will approach these questions both philosophically and through formal techniques. **CC:** HUM **ISP:** STS

PHL 233 - Early Modern Philosophy

Course Units: 1.0 An examination of some of philosophy's "Greatest Hits," from some of the 17th and 18th centuries' greatest thinkers: Descartes, Leibniz, Locke, Berkeley, Hume, and Kant. We will consider questions like: Is there a God, and how could we know? Is your mind just your brain, or do you have an immaterial soul? What is free will, and are we just fooling ourselves when we think we have it? Does your subjective perception of the world correspond to how it is in reality, and how can you possibly know? Are there universal moral duties, which everyone has an obligation to follow regardless of their personal inclinations? **CC:** HUM **ISP:** STS

PHL 265 - Minds and Machines

Course Units: 1.0 Is it possible to build a computer that effectively simulates human intelligence? If we did so, would the computer really be intelligent, or would it merely seem to be: Would the computer have free will? Do we have free will, or is human freedom merely an illusion? Do we have immaterial souls that can survive the deaths of our bodies and brains? In this advanced introduction to the philosophy of mind, we will consider these and other questions about what it means to have a mind, and about the relationship between mind and the brain. **CC:** HUM **ISP:** STS

PHL 273 - Environmental Ethics

Course Units: 1.0 An exploration of the ethical and philosophical ideas that have shaped attitudes toward the environment and toward non-human species. **CC:** HUM **ISP:** ENS, STS

PHL 274 - Biomedical Ethics

Course Units: 1.0 An introduction to ethical problems in biology and medicine, touching on such issues as reproductive ethics (abortion, cloning), research ethics, the ethics of death and dying (assisted suicide, euthanasia) and similar subjects. **CC:** HUM **ISP:** STS

PHL 374 - Advanced Biomedical Ethics

Course Units: 1.0 An advanced historically based introduction to biomedical ethics. Among the subjects treated will be the relationship between bioethics and traditional medical ethics, the evolution of the discourse, core concepts, models, theories and organizational infrastructure of bioethics, including IRBs and ethics committees. The course is designed to serve as a foundation for graduate work in bioethics and to fulfill the required knowledge competencies recommended by the American Society of Bioethics and Humanities in its 1998 report Core Competencies for Health Care Ethics Consultation. **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM **ISP:** STS

Political Science

PSC 123 - Topics in Mathematical Political Science

Course Units: 1.0 A mathematical treatment (not involving calculus or statistics) of escalation, political power, social choice, and international conflict. **Cross-Listed:** MTH 060 **Prerequisite(s):** No previous study of political science is necessary, but PSC 111 or PSC 112 would be relevant. **CC:** QMR, SOCS **ISP:** STS

PSC 242 - Comparative Climate Change Politics

Course Units: 1 This year we have seen historic temperature records and heatwaves across the globe, the impacts of wildfires around the country and locally, and periods of drought and extreme storms in different areas. These have been attributed to or amplified by anthropogenic climate change, which is one of the biggest challenges facing society in the 21st century. This course examines why climate change is such a "wicked problem," and why it is so difficult to address effectively. The barriers to addressing climate change are not just technical and scientific, but also political and social. Thinking about a future where we as a society mitigate the worst impacts of climate change this century, and adapt to other impacts entails navigating different political systems around the world and balancing various geopolitical and economic interests. Through this course, we will examine how these factors shape or constrain efforts to address climate change in Western Europe, the United States, China, India, and other parts of the world. We will also examine how climate change is impacting human life and security in these countries and other parts of the world, and how it may amplify existing inequalities and other crises. **ISP:** ENS, STS

PSC 263 - US Environmental Policy

Course Units: 1 This course examines the emergence, development, and future directions of environmental policy within the United States. It covers early environmental policy achievements such as the Clean Air Act, the reasons for federal inaction on environmental policy since the 1990s, and new directions for policy action in the 21st century as society understands. **ISP:** ENS, STS

PSC 272 - The Environment, Energy, and US Politics

Course Units: 1.0 Examination of how politics and policymaking affect the air we breathe, the water we drink, and the land we live on. This course will explore key U.S. environmental issues and their scientific underpinnings as well as the connections between these issues and our collective use of natural resources. The course will review major pieces of federal environmental law in the United States and address the policy considerations, justifications, and regulatory

frameworks underlying them, as well as the effectiveness of these laws in achieving a healthier environment. The course will also examine the respective roles of Congress, the executive agencies, and the courts in determining environmental policy. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, STS

PSC 282 - Health Politics and Policy

Course Units: 1.0 This course will examine the subject of health care policy in the American political system. Students will learn about the roles and functions of key actors, institutions, concepts, and principles as part of a broad overview of American health politics. From this foundation, we will develop a theoretical and practical framework to ground our analysis of current health policy issues and debates. Topics will include finance, insurance, Medicare/Medicaid, the Patient Protection and Affordable Care Act (aka "Obamacare"), prescription drug regulation, private markets, the public interest, ethics, and the role of government. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, WAC **ISP:** AMS, STS

PSC 283 - Social Movements, the Environment and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** SOC 270 **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **ISP:** AMS, ENS, STS

PSC 302 - U.S. Energy Policy

Course Units: 1

Considers the protections afforded to individual rights and liberties by the U.S. Constitution and the Bill of Rights. Topics include freedom of speech and assembly, the right to privacy, religious freedom, equal protection and discrimination, and the due process rights of those accused of crimes. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **Cross-Listed:** ENS 302 **Prerequisite(s):** PSC 111 or PSC 112
CC: SOCS, JCHF, JSPE **ISP:** AMS, ENS, STS

PSC 346 - Technologies in Society: Power, Politics and Economy across Industrial Revolutions

Course Units: 1.0 With the advent of the internet, robotics, Big Data, artificial intelligence and machine learning, we are already well into a Third (some say 'Fourth') Industrial Revolution. If history is any guide, this industrial revolution is transforming society, politics and culture in ways both overt and subtle. Further, as it diffuses, it will not be replicated identically across time and space. This course compares the first, second and third industrial revolutions - selectively focusing on the advent of factories/machines, mass production and information technologies, respectively. For each revolution, the course asks three questions 1) how value is created, 2) who controls and benefits from the new modes of production and consumption, and 3) how it transforms and is transformed by its social and political contexts. Second, it explores variation across different national political economies, most prominently in the advanced countries of England, the US, Europe and Japan, with selective comparisons to other developing countries, including China today. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, GCHF, GSPE **ISP:** STS

PSC 349 - Seminar: Comparative Politics

Course Units: 1.0 Selected topics in comparative politics. Content will vary from year to year. Preference to junior and sophomore political science majors. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, WAC **ISP:** STS

Psychology

PSY 210 - Neuroscience: Mind & Behavior

Course Units: 1.0 Basic concepts of brain functioning as they relate to psychological phenomena. Including methodology, neuroanatomy, and neurotransmission, important for understanding the mediation of behavior. **Cross-Listed:** BIO 210 **Prerequisite(s):** PSY 100 or (BIO 103 and BIO 104) **CC:** SET **ISP:** STS

PSY 215 - Health Psychology

Course Units: 1.0 This course will examine psychology's role in the etiology, prevention, progression, and treatment of disease. Topics will include mechanisms by which stress and health-related behaviors such as diet, exercise, smoking and substance abuse contribute to illness, doctor-patient communication, problems of medical compliance, cognitive/behavioral treatment techniques, pain management, and health promotion/ disease prevention strategies. **Prerequisite(s):** PSY 100 **ISP:** STS

PSY 242 - Death and Dying

Course Units: 1.0 This course will examine the social and psychological processes that shape the dying and bereavement process. The historical and cultural factors that influence attitudes toward dying and the ethical issues that impact decisions about how we die will be discussed. In addition, this course will discuss end of life care, including hospice, palliative care and pain management; how our health care system treats the dying; mental health interventions; and suicide. There are no prerequisites for this course. **CC:** JSPE, WAC **ISP:** STS

Sociology

SOC 226 - Medical Social Work

Course Units: 1

An overview of the social work role in health care settings as an advocate, practitioner, and leader within interdisciplinary teams. A comprehensive view of the professional values, theories, and methods that social workers utilize in this role to provide advocacy, individual, family and group counseling, educate patients and families, effective crisis intervention, resource referrals and influence public health policies.
Prerequisite(s): SOC 100 **CC:** SOCS **ISP:** STS

SOC 228 - Sociology of Medicine

Course Units: 1.0 Sociological perspectives on health, illness, the health professions and institutions, including studies of the social components of disease and its distribution, doctor-patient relations, and alternative health-care systems. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** STS

SOC 270 - Social Movements, the Environment, and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among

these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** PSC 283 **Prerequisite(s):** SOC 100 **ISP:** AMS, ENS, STS

SOC 284 - Sociology of Women & Health

Course Units: 1.0 A critical introduction to the sociological analysis of issues in women's health in the contemporary United States, emphasizing how the key variables of gender, race & class structure access to health & well-being for women in our society. **Prerequisite(s):** SOC 100 **ISP:** AMS, GSWS, STS

SOC 359 - Environmental Policy and Resource Management

Course Units: 1.0 An examination of environmental issues and problems such as acid rain, ocean dumping, and nuclear wastes, and the social forces that shape environmental policies. Students complete an internship with an environmental service theme. **CC:** SOCS **ISP:** ENS, STS

SOC 370 - Public Health

Course Units: 1.0 An overview of public health with emphasis on the impact of large-scale social and cultural forces on the health of the public. The epidemiology of selected diseases, injuries, and the addictive disorders; the health effects of exposure to environmental and work place toxins; the role of nutrition in health. **ISP:** ENS, STS

SOC 372 - Global Health

Course Units: 1.0 An in-depth survey of health care systems and topics from a cross-cultural perspective, of particular interest to health care providers and practitioners and to students interested in comparative health care systems particularly those planning to go on the Health Systems Term Abroad. **ISP:** STS

SOC 374 - Mental Health and Society

Course Units: 1.0 A general introduction to the social scientific study of mental health. Topics include theories of mental illness, epidemiology of mental illness, the social experience of being a mental patient, and contemporary issues in mental health. **CC:** SOCS **ISP:** STS

Science, Medicine, and Technology in Culture Major

The SMTC major consists of 12 courses: all students must take one of five introductory SMT courses (HST 138, HST 293, PHL 232, SMT 123, or SOC 228); a three-course concentration in either (1) history and political science, (2) economics, (3) sociology and anthropology, or (4) philosophy, with all of these classes drawn from the list of SMT courses provided on our program website; three courses in engineering and science, each of which must count for the major of the respective engineering or science department; three SMT courses drawn from the online list; and a two-term interdisciplinary thesis.

Science, Medicine, and Technology in Culture Minor

Requirements for the Minor:

Students wishing to minor in SMT must take six SMT courses from the list below, drawn from at least three different departments and including at least one of the SMT core courses.

SMT/STS Courses

Core Courses (1 course)

STS 101 - Intro to Science, Technology, and Society

Course Units: 1 This course introduces students to the range of methodologies, epistemologies, topics, and concerns central to the fields of Science, Technology, and Society (STS). How do scientific concepts develop, take root, and evolve? What range of roles do scientists and engineers play as they interact and intersect with broader societies? How might scientific practice and theory affect public planning and discourse? What are the social, political, anthropological, moral, religious, philosophical, and ethical dimensions of technosciences complex roles in human cultures and societies? These are some fundamental questions that we will explore together in this survey course, which is a team-taught class offered by three or four of Union Colleges faculty members. **CC:** GCHF, GETS **ISP:** STS

Capstone Course

STS 498 - Science, Technology, and Society Senior Thesis 1

Course Units: 0.0

STS 499 - Science, Technology, and Society Senior Thesis 2

Course Units: 2.0 **CC:** WS

Electives

Anthropology

ANT 230 - Medical Anthropology

Course Units: 1.0 An examination of beliefs about illness, healing, and the body and how these are shaped by culture and society. Topics include healing practices across cultures, political forces shaping medical practice in the U.S., and birthing practices in different cultures. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** GSW,STS

ANT 234 - Health and Healing in Africa

Course Units: 1.0 This course will explore the diversity of health-related beliefs and practices across Africa. We will firmly situate perspectives and approaches to health and illness within a broad sociocultural and historical context, also helping to challenge stereotypes associated with the continent. By cultivating a deeper knowledge of how African communities perceive and treat afflictions as well as international responses to health crises (e.g. Ebola), we will develop a cross-cultural perspective that expands our understanding of global, as well as local, health and healing. **CC:** LCC, SOCS **ISP:** STS

ANT 240 - Technology, Culture & Society

Course Units: 1.0 Examines the role of technology in cultural change and the role of culture in technological change. Particular attention will be given to: the Internet and other so-called "virtual community" formations, graphic design and other media, "reality" TV, cross-cultural advertising, and popular music. **CC:** LCC, SOCS **ISP:** FLM, GSWS, STS

ANT 241 - Environmental Anthropology

Course Units: 1.0 This course examines anthropological approaches to the environment and environmentalism. It asks questions such as: How does culture shape our perception of nature? What can conflicts over environmental protection, natural resources and human manipulations of natural materials tell us about contemporary societies? What does it mean to call an issue "political" or "cultural," versus "scientific" or "technical"? Students will develop the critical analysis skills to examine the natural world as a site of cultural politics, using anthropological concepts to examine environmentalism in diverse geographical and historical settings, including the Amazon, the Niger Delta, the suburban mall, and the Union campus. **CC:** LCC, SOCS, GCHF, GSPE **ISP:** ENS, STS

ANT 258 - Anthropology of Media

Course Units: 1.0 How do communications media reshape ourselves and the worlds we inhabit? This course examines the influence of media on contemporary society. It focuses on identity formation and the different ways that scholars have approached the relationship between media and our taken-for-granted norms, practices, and beliefs. Readings draw from a wide range of disciplines and intellectual traditions, including cultural studies, critical media theory, critical race studies, feminist studies and communication. However, the fundamental approach is anthropological. Our aim is to understand how everyday media practices relate to larger issues of personal, social and cultural identity. To this end, the class moves back and forth between theory and ethnography so that students develop both a sense of key questions in the field and an idea about how to answer them. **CC:** SOCS, WAC, GCHF, GSPE **ISP:** STS

ANT 272 - Psychological Anthropology

Course Units: 1.0 This course examines the influence of culture and society on individual psychology. Readings and class discussions examine the history of the way anthropologists have thought about the relationship between culture and personality. Issues examined will include: Do cultures produce and favor distinctive personality types? How is mental illness shaped by cultural beliefs and social practices? Are there distinctive "culture bound syndromes" and, if so, what produces them? Do cultures provide tools to help individuals adjust to crises? Do some cultures do this better than others? Are emotions fundamentally the same across cultures or does emotional experience vary significantly with culture? Is there a culture of psychiatry in the US? How do our cultural assumptions and our pharmaceutical industries shape our views of personality and mental illness? Cases will be drawn from Oceania, Asia, North America, and the Middle East. **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AIS, GSW, STS

Art History

AAH 115 - Leonardo da Vinci: Science, Art, and Technology in the Early Modern Era

Course Units: 1.0 This course explores the history of science and technology during a fascinating and complex period when "modern" sciences and engineering are just beginning to emerge in Western Europe. Our focus will be on the artist and thinker Leonardo da Vinci, whose writings, drawings and other works of art provide a vivid picture of the state of imagination, observation, and the pursuit of scientific and technological knowledge, both theoretical and practical, during a time of great change. Leonardo's remarkably varied interests will allow us to study a wide range of subjects, from botany, optics and astronomy to hydraulic, civil and military engineering; from mining and metallurgy to anatomy and medicine; from diving bells to flying machines. This course has no prerequisites. **CC:** HUM, LCC, WAC **ISP:** STS

AAH 205 - The Art and Science of Painting

Course Units: 1.0 A historical and chemical grounding in the topic of painting and its impact on society, with a focus on the 14th to the 17th centuries. Topics include inorganic and organic pigments and binders used in late medieval

workshops, fresco painting, the tempera tradition, and oil painting in the Renaissance (properties of oil, mixing pigments, glazing, drying). Students will work with primary sources and secondary literature, and engage in laboratory experimentation. **Cross-Listed:** CHM 090 **CC:** SET, HUM **ISP:** STS

AAH 265 - Environmentalism and Globalization in Contemporary Art

Course Units: 1.0 This course examines artistic practices that meld science, aesthetics, and politics in imaginative and critical ways as they address environmentalism and globalization. The course primarily focuses on 21st century artists whose work takes on such subjects as pollution, biodiversity, sustainability and climate change. We will consider the blurring of the boundaries between art and activism and the many art genres and strategies used to address these issues from photography and sculpture to community collaborations and public art. **CC:** HUM, GCAD, GCHF, GSPE **ISP:** AMS, ENS, STS

Astronomy

AST 050 - The Solar System

Course Units: 1.0 An introductory but detailed discussion of the solar system with special emphasis on the application of physics and the measurement of fundamental properties. Topics include the contents of the solar system (earth, moon, sun, planets, asteroids, comets), formation of the solar system, evolutionary processes (cratering, volcanism, tidal effects), extrasolar planetary systems, and possibilities of life on other planets. Labs will be performed in which students learn how to find and observe the planets and measure fundamental properties. No background in mathematics or physics required. **Corequisite(s):** AST 050L **CC:** SCLB, SET, GNPS **ISP:** STS

AST 058 - Astrobiology: Life in the Universe

Course Units: 1.0 Does life exist elsewhere in the universe, or are we alone? The emerging science of astrobiology attempts to answer this fundamental question using an interdisciplinary approach rooted in biology and astronomy. This course will examine the current state of our scientific knowledge concerning the possibility of life elsewhere in the universe. Topics include: the nature and origin of life on Earth, the possibility of life on Mars and elsewhere in the Solar System, the search for extrasolar planets, the habitability of planets, and the search for extraterrestrial intelligence. **CC:** SET **ISP:** STS

Biology

BIO 050 - Topics in Contemporary Biology

Course Units: 1.0 Recent developments in biology are pertinent to human health and to concerns of the nature of life and of human social values. This course will focus on human genetics, human genetic diseases, the genetic component of other diseases, the genetics of cancer, and the immune system. **Corequisite(s):** BIO 050L **CC:** SCLB **Lecture/Lab Hours** One lab every other week. **ISP:** STS

BIO 058 - Astrobiology

Course Units: 1.0 Does life exist elsewhere in the universe or are we alone? The emerging science of astrobiology attempts to answer this fundamental question using an interdisciplinary approach rooted in both biology and astronomy. This course will examine the current state of our scientific knowledge concerning the possibility of life elsewhere in the universe. Topics include the nature and origin of life on Earth, the possibility of life on Mars and elsewhere in the solar system, the search for extra solar planets, the habitability of planets, and the search for extraterrestrial intelligence. **Cross-Listed:** AST 058 **CC:** SET **ISP:** STS

BIO 077 - Technology of Biology

Course Units: 1.0 Advances in technology have been utilized by scientists and physicians for many centuries. Today, with the rapid developments in molecular biology, the technology often outpaces the understanding and acceptance of the public. This course will look at technological advances relating to biology from both a historical and modern perspective, with an emphasis on how molecular biology has revolutionized our lives. Medical, environmental, and industrial topics will be included. **Prereq/Corequisite(s):** Not open to students that have already completed BIO 103 or BIO 104 **CC:** SET **ISP:** STS

BIO 094 - Understanding Cancer

Course Units: 1.0 Everyone has been touched at some point in their lives by cancer. This course aims to provide insight into the fundamental concepts involved in the life cycle of a cell, how cancer is related to those processes, and how those fundamental processes have led to advances in cancer treatment. **Prereq/Corequisite(s):** Not open to students who have already completed BIO 103 or BIO 104 **CC:** SET **ISP:** STS

BIO 243 - Bioinformatics: Information Technology in the Life Sciences

Course Units: 1.0 The disciplines of biology and information technology are intersecting with increasing frequency, most notably in the emerging field of bioinformatics. Bioinformatics has been fueled by the advent of large-scale genome sequencing projects, which has generated enormous sets of "mineable" data representing an invaluable resource for biologists. Biology and computer science students in the course will gain a working knowledge of the basic principles of the others' discipline and will then collaborate together in class on bioinformatics projects. Topics include pairwise and multiple sequence alignments, phylogenetic trees, gene expression analysis, and personalized medicine. **Cross-Listed:** CSC 243 **Prerequisite(s):** BIO 205 or a C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , or CSC 108 **CC:** SET **ISP:** STS

Chemistry

CHM 060 - Meals to Molecules

Course Units: 1.0 What is a healthy diet? This course will discuss human nutrition from a molecular perspective. Readings from the textbook and laboratory exercises will familiarize the student with the components of foods and how these components are used by the human body. In addition, the course will examine the benefits and pitfalls of supplementation of the diet with vitamins, etc., and discuss how to interpret health claims. **Corequisite(s):** CHM 060L **Prereq/Corequisite(s):** Not open to students who have completed CHM 101 or CHM 110H , or have AP credit in chemistry. **CC:** SCLB **ISP:** STS

CHM 080 - Culinary Chemistry

Course Units: 1.0 This culinary-themed course is an introduction to the chemistry involved in food preparation and cooking. The course will include lecture and a laboratory experience with inquiry-based exercises in both the traditional chemical laboratory setting and a typical kitchen setting. Topics include the chemical make-up of the food we eat, the relationship between structure and flavor, and how chefs exert exquisite control over chemical reactions to create the flavor and texture of a gourmet meal. **Prereq/Corequisite(s):** Not open to students who have completed CHM 101 or CHM 110H , or have AP credit in chemistry. **CC:** SCLB **ISP:** STS

CHM 090 - The Art & Science of Painting

Course Units: 1.0 A historical and chemical grounding in the topic of painting and its impact on society, with focus on the 14th to 17th centuries. Topics include inorganic and organic pigments and binders used in the late medieval workshop, fresco, the tempera tradition, and oil painting in the Renaissance (properties of oil, mixing with pigments, glazing, drying). Students will work with primary sources and the secondary literature, and engage in laboratory experimentation. **Cross-Listed:** AAH 205 **CC:** SET, HUM **ISP:** STS

Classics

CLS 153 - The Environment in the Ancient World

Course Units: 1.0 Students will discover how ancient Mediterranean societies interacted with the natural world, as revealed by history, art and literature, and archaeology. Some of the questions we will investigate include: how did the Mediterranean environment affect and determine everyday life, both in cities and in rural areas? How did ancient societies manage their food supply? What was their view of nature? How did they react to ecological crisis? And, finally, how can we use their outlook on and treatment of the environment to inform our own approach? **CC:** HUM, LCC, GCHF **ISP:** ENS, STS

CLS 190 - Science and Technology in the Ancient World

Course Units: 1.0 This course is an introduction to the scientific and technological developments during the Greek and Roman periods. Students will deepen their understanding of the scientific method, acquire skills in its application in the evaluation of evidence, and learn about the impact of science and technology on ancient civilization. The time periods covered in this class will stretch from Bronze Age of Greece to the Late Roman Empire. This course will discuss a broad range of scientific and technological topics. Students will learn about this crucial aspect of antiquity predominantly through the reading of original sources in translation. Because of the diverse nature of the topics, the authors will range greatly, including such authors as Hesiod, Pliny the Elder, and Frontinus. Students will be expected to draw conclusions from the primary source material as well as connect the ancient texts to other scholarly readings. The secondary reading will be drawn from a variety of academic disciplines, including classics and history of science. Ultimately, students will gain a better understanding of the role that ancient technological and scientific developments have had in their own world. **CC:** HUM **ISP:** STS

CLS 192 - Ancient Medicine

Course Units: 1.0 This course explores the Greek and Roman roots of Western medicine. How did the Hippocratic writers, Galen, and other physicians understand and treat the ailments of patients? And what did it mean, in the first place, to be a physician or a patient two millennia ago. **CC:** HUM **ISP:** STS

CLS 193 - History Done Digitally

Course Units: 1 What do you think of when you hear "Humanities"? If you ask someone in the humanities what they study, you may hear a hundred different answers: great authors, established historians, artistic masterpieces. You seldom hear "Data." But that is exactly what all of these works are. In the modern world, countless tools have been developed to facilitate the access, analysis, and dissemination of data. In this course, we will learn how to use various technologies to both ask and answer questions traditional to the humanities and come up with new ones, with a focus on the ancient and medieval world. **Cross-Listed:** HST-140 **CC:** HUM, QMR, GDQR **ISP:** STS

Computer Science

CSC 055 - Working with the Web

Course Units: 1.0 Design, writing, and publishing of WWW pages; creation of graphical images; study of the underlying Web technologies such as communication protocols, digital encoding and compression; programming of Web pages. **CC:** SET **ISP:** STS

CSC 080 - History of Computing

Course Units: 1.0 A survey of tools for computation, from number systems and the abacus to contemporary digital computers. The course focuses on the development of modern electronic computers from ENIAC to the present. Study of hardware, software, and the societal effects of computing. **Cross-Listed:** HST 292 **CC:** SET **ISP:** STS

CSC 103 - Taming Big Data: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with the theme of natural and social science applications. Introduces students to algorithms, basic data structures, and programming techniques. Includes development of programs and use of existing applications and tools for computational applications including simulation, data analysis, visualization, and other computational experiments. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 104 - Robots Rule! Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a robotics theme. Introduces students to algorithms, basic data structures, and programming techniques. Students will build and program robots, exploring mobility, navigation, sensing, and inter-robot communication. Additional class topics include: history of robotics, social and ethical issues, emotionally intelligent behavior and other current topics in robotics. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 105 - Game Development: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a computer games theme. Introduces students to algorithms, basic data structures, and programming techniques. Computer game development is used as an example application area and students implement their own games throughout the course. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 106 - Can Computers Think? Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with an artificial intelligence theme. Introduces algorithms, basic data structures, programming techniques, and basic methods from artificial intelligence. Includes discussion of questions in the philosophy of artificial intelligence. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 107 - Creative Computing: Introduction to Computer Science

Course Units: 1.0 Introduction to the field of computer science with a media computation theme. Introduces students to algorithms, basic data structures, and programming techniques. Media computation is used as an application area, focusing on image manipulation, sound splicing, animations, HTML generation and automated reading of web pages. **Prereq/Corequisite(s):** A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** QMR, SET, JDQR, JETS **ISP:** STS

CSC 108 - Scientific Computing: Introduction to Computer Science

Course Units: 1.0 Computers are used as tools in analyzing and solving scientific problems as well as being embedded in many applications and experimental equipment used by today's scientists. This course is designed to introduce students to computer programming and problem solving through the use of Python. Python is a language commonly used by the scientific community, and we will focus on using it to address scientific problems, using extensions that facilitate scientific computing. CC: QMR, SET Note: A grade of C- or better is required in order to take any course that requires an introductory course as prerequisite. Once one has passed an introductory course with a C- or better, no other introductory course may be taken for credit. **CC:** SET, QMR, JDQR, JETS **ISP:** STS

CSC 240 - Web Programming

Course Units: 1.0 This course addresses the standards in programming applications for the Web. It covers the client-side technologies HTML, CSS, and JavaScript as well as server-side technologies PHP and MySQL. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 **CC:** SET **ISP:** STS

CSC 243 - Bioinformatics: Information Technology in the Life Sciences

Course Units: 1.0 Biology and computer science students will gain a working knowledge of the basic principles of the others' discipline, and will collaborate together on bioinformatics projects. Topics include pairwise and multiple sequence alignments, phylogenetic trees, gene expression analysis, and protein structure prediction. Additional topics will be presented by invited speakers. **Cross-Listed:** BIO 243 **Prerequisite(s):** BIO-205 **or** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 ,or CSC 108 . **CC:** SET **ISP:** STS

CSC 245 - The Computer Science of Computer Games

Course Units: 1.0 This course surveys the field of computer science from the perspective of computer games. Topics explored include: rendering of graphics to a screen, implementation of realistic simulation, use of artificial intelligence in games, handling user input, game physics, collaborative development. Final course project is a complete computer game. **Prerequisite(s):** C- or higher in one course from CSC 103 , CSC 104 , CSC 105 , CSC 106 , CSC 107 , CSC 108 . **CC:** SET **ISP:** STS

Economics

ECO 134 - Data Visualization

Course Units: 1.0 The digital world we live in generates vast amounts of data. This data has the potential to help us understand the world and make better decisions. This course is about representing data using the visual domain. We learn how to turn gigabytes of numbers into pictures and interactive displays. We will use the visual domain not only for communicating insights but also as a means of analysis. We will learn about data structures (how to connect to data), data aggregation (how to summarize data), and principles of design (how humans consume visual content). We will apply these concepts to business and economic data, including sales, financial performance, pricing, etc. The emphasis is on hands-on exercises and creation of new visualizations using data visualization software Tableau. **CC:** SOCS, JDQR **ISP:** STS

ECO 228 - Environmental and Natural Resource Economics

Course Units: 1.0 Economic causes of environmental degradation and natural resource depletion; benefit-cost analyses of public policies for environmental protection and natural resource preservation; specific issues in energy and wilderness resource management, air and water pollution abatement, and solid waste management. **Prerequisite(s):** ECO 101 or permission of instructor. **CC:** SOCS **ISP:** STS, ENS

ECO 332 - Economics of Technological Change

Course Units: 1.0 The course will cover both macro and micro aspects of technological change. Topics include: Exogenous growth models, innovation-driven Schumpeterian growth models, creative destruction and the economy, competition and market structure, valuation of Research and Development (R&D) and patents, patent litigation and enforcement of Intellectual Property Rights (IPRs), innovation, technology diffusion in the global economy, and design of IPR regimes and R&D policies. **Prerequisite(s):** ECO 241 or ECO 242 **CC:** SOCS **ISP:** STS

ECO 335 - Economics of Health

Course Units: 1.0 Examination of demand and supply for medical personnel; analysis of hospital cost, inflation, and health insurance. Discussion of issues in cost benefit analysis of public health and regulation of health care markets. **Prerequisite(s):** ECO 241 and ECO 243 , or permission of the instructor. **CC:** SOCS **ISP:** STS

Engineering Science/Engineering

ESC 100 - Exploring Engineering

Course Units: 1.0 An introduction to engineering including fundamental topics core to engineering. The course includes a weekly design studio that emphasizes engineering design, teamwork, technical writing and ethics through several individual and team design projects. Not available to junior or senior engineering students. **Corequisite(s):** ESC 100L **CC:** SET, GETS **ISP:** STS **Note:** General engineering course common to more than one program.

ESC 104 - Geographical Mechanism Synth

Course Units: Early engineers relied on intuition and graphical techniques to design mechanisms throughout history, this course explores these graphical techniques. Many of these techniques are still in use today to provide insight into engineering problems and to solve contemporary challenges. The course also explores multiple techniques used to develop innovative mechanismdesigns. The course is appropriate for non-engineering, non-science, and engineering majors alike. As part of the course, students will identify a challenge they encounter and will be lead through the human centered design process to create a functional prototype of the solution. **CC:** GETS **ISP:** STS

English

EGL 140 - Introduction to Digital Studies: Digitizing the Past

Course Units: 1 The digital age and the medieval period-two disparate phases of history-may at first blush appear to have nothing in common. Yet, as medieval scholars have shown, this myth is best dispelled in and through the medieval manuscript, a physical object representing the convergence of text and technology in its earliest form. Using the medieval manuscript as a case study, this class will introduce students to digital topics such as online storytelling, digital archives and curation, online exhibits, data interpretation, and more. Along the way, students will learn skills of technical literacy, written analysis, and archival interpretation using programs such as Omeka, Artsteps, Audacity, Voyant Tools, and StoryMaps. **Cross-Listed:** SMT 140, AAH **CC:** HUL, WAC, HUM

EGL 276 - Literature of the Manor House

Course Units: 1.0 In this course we will investigate the rich and complex history of the genre of English manor house fiction. Focusing on texts ranging from Jane Austen's *Northanger Abbey* and E. M. Forster's *Howards End* to Kazuo Ishiguro's *The Remains of the Day*, Sarah Waters' *The Little Stranger*, and Ian McEwan's *Atonement*, we will explore issues of gender, sexuality, race, and especially class in both course readings and class discussions. Furthermore, we'll examine a number of filmic representations of British country house life, including Robert Altman's *Gosford Park* and Julian Fellowes' *Downton Abbey*. In addition to crafting course papers, students will have the option to research, create, and showcase their own multi-media projects exploring virtual manor homes via a range of freely downloadable programs and platforms. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCAD, JLIT **ISP:** GSW, STS

EGL 279 - Literature and Science

Course Units: 1.0 An interdisciplinary examination of the interactions between literature and science. Topics will vary from year to year and may include science writing, the representation of science and scientists in literature, literature inspired by science, literature and science as competing ways of knowing the world, the figurative dimension of scientific writing, and speculative fiction. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM **ISP:** AMS, STS

EGL 280 - Nature and Environmental Writing

Course Units: 1.0 This course will focus on the traditions of nature and environmental writing in the American context, with an emphasis on the social and cultural dynamics of the environment and environmental action. Among other questions, we will ask ourselves: How do class, gender, and race enter into the nexus of social interactions that shape our environment? What is the place of literature in community, literacy, and environmental activism? What are the connections between the ways we speak and write about the environment and our actions toward the environment? How does the wilderness concept affect the ways citizens have access to public spaces? We will consider the concept of "nature" as we move through the course, culminating (if you like) with some nature writing of your own. Readings may include Thoreau; Carson; Leopold; Kingsolver, and selections from *Reading the Roots: American Nature Writing Before Walden*; *Colors of Nature*; Lauret Savoy, T*race: Memory, History, and the American Landscape*; and F. Marina Schauffler, *Turning to Earth: Stories of Ecological Conversion.* **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC, JCHF, JLIT, JSPE **ISP:** AMS, ENS, STS

EGL 281 - Environmental Psychology and the American Literary Landscape

Course Units: 1.0 Environmental research psychologist Maria Vittoria Giuliani emphasizes that human-to-place attachments "not only permeate our daily life but very often appear also in the representations, idealizations and expressions of life and affect represented [in] literature." Indeed, many literary works emphasize humanity's basic attachment needs and the importance person-to-place bonds have in the development of the human psyche. American fiction writers frequently employ descriptions of American landscapes as inspiration for character and plot development, and American nature writers often emphasize the way in which wilderness environments may influence one's mental and physical health and emotional well-being. In fact, recent studies in the field of cognitive neuroscience provide empirical evidence to substantiate the theory that exposure to a natural environment may actually generate structural changes in the brain by increasing oxygenation and blood flow that occur in response to neural activity. Hence, this course will employ contemporary studies in place attachment, environmental psychology, and cognitive neuroscience to examine the way in which various literary works illustrate the important role environment plays in aiding or obstructing one's ability to think, reason, remember, problem-solve, process information, use language, or be creative. **Prerequisite(s):** One 100-level English course or a score of 5 on the AP English Language or Literature and Composition test. **CC:** HUL, HUM, WAC **ISP:** AMS, ENS

EGL 284 - Interactive Fiction Workshop

Course Units: 1 Interactive fiction is storytelling that uses technology to create an interactive "reading" experience, requiring the reader to make choices that influence the plot. In this course you are going to read, critique, and create interactive fiction. You'll develop your storytelling skills, and along the way you'll learn some programming concepts, and history of narrative. video games. We'll also consider how race, gender, class, sexuality, and (dis)ability shape our experiences of these games as players and writers. No previous CS experience is necessary. Students will need access to a laptop for class. **Cross-Listed:** CSC 084 **Prerequisite(s):** One 100-level English course, a score of 5 on the AP English Language or Literature and Composition test, or permission of instructors. **CC:** HUL, HUM, SET, WAC, JCAD, JETS, JLIT **ISP:** AMS, GSW, STS

EGL 306 - Jr. Seminar (Spring): The Beatles, Motown, and Taylor Swift

Course Units: 1.0 This is a course on the cultural politics of popular music. Since pop music is, by definition, ephemeral - shaped by and to some degree shaping the attitudes of a particular time and place - it can offer insights into what those attitudes were. On the contrary, some pop music transcends its cultural milieu, thus revealing something deeper about our culture in general. The Beatles, the most influential and still the most popular band of the rock era, offer one example; the musicians of Motown and other predominantly African-American recording platforms like Stax-Volt, without whom there would be no Beatles, offer another. After examining the lasting contributions of these artists as a foundation, we will, in the last weeks of the term, look at more contemporary pop musicians and their impact. Taylor Swift will be the focus, but students may nominate their own candidates (Beyonce? Rihanna? The Replacements?) for pop immortality and impact as well. **Prerequisite(s):** One 100-level and two 200-level English courses or instructor's permission. **CC:** HUL, HUM, WAC-R **Note:** No musical knowledge is required for this course. An ability to keep time and notice stand-out musical elements (key modulations, odd or interesting chords) would be useful but is not required. If you can play a bit, though, feel free to do so.

Environmental Studies

ENS 100 - Introduction to Environmental Studies

Course Units: 1.0 An introduction to environmental studies from a scientific, policy, and engineering perspective. This course covers human-environment interactions, with a focus on the impacts of human activities on natural systems such as climate, air, water, and species diversity and the ensuing environmental injustice. The course discusses sustainable solutions for how we can build systems that will support billions of humans and the natural world. Fieldwork during lab periods involves the investigation of local environmental problems and solutions. This course is intended for first- and second-year Environmental Science and Environmental Policy majors, but it is open to all students. **Corequisite(s):** ENS 100L **CC:** SCLB, GNPS **ISP:** ENS, STS

ENS 204 - Geographic Information Systems

Course Units: 1.0 An introduction to Geographic Information Systems (GIS) technology and its practical uses. Topics include history of GIS, geographic data types, primary data structures, system design, map coordinate systems, data sources, metadata, census data, geographic coding and address matching, digitizing, remote sensing imagery, measures of data quality, and needs assessment. An emphasis will be on hands-on instruction using GIS software (ArcView). Students will work with ArcView throughout the term to complete assignments and a class project. Focus areas include archeology, electric and gas utilities, surveying, health and human services, insurance, law enforcement and criminal justice, media and telecommunications, transportation, water and wastewater, and natural resources. The ultimate goal is to use the spatial component of data in conducting analysis and making decisions. **Prerequisite(s):** A good background in the use of modern computer software. **Corequisite(s):** ENS 204L **CC:** SET, GETS **Lecture/Lab Hours** Two class hours and two lab hours weekly. **ISP:** ENS, STS

ENS 208 - Waste Management and Recycling

Course Units: 1.0 This course will introduce students to various sources of solid waste materials including hazardous and nonhazardous waste, and biodegradable and non-biodegradable waste. Focus areas are overview of landfill systems, geosynthetics, geotextiles, geomembranes, geonets, single clay liner, single geomembrane liner, composite liner systems, leak detection and leachate collection, removal and treatment of leachate, and capping and closure systems. The recycling segment will explore natural resources of raw materials including origin and use. It will also investigate the potential and limitation for recycling of materials. The focus area will be various applications of recycling recyclable and nonrecyclable materials especially non-biodegradable waste. Discussion of methods of manufacture and compositions of such materials will concentrate on advanced industrial applications for the reuse of non-recyclable waste materials. Application areas include production of new materials, materials with superior qualities for special purposes, and materials with high level of resistance against certain environmental conditions. The course will also touch on the political aspect of recycling including consumer attitude and government incentives to encourage recycling. **Prerequisite(s):** ENS 100 or GEO 110 **CC:** SET, GETS **ISP:** ENS, STS

ENS 209 - Renewable Energy Systems

Course Units: 1.0 The study of renewable energy resources and the conversion technologies available to utilize them to meet society's energy needs. Topics include forms of energy; First and Second Laws of Thermodynamics; energy conversion and efficiency; sustainability; energy storage. Historical perspective on world and U.S. energy usage, conversion technologies, and energy resources. Fundamentals of the conversion processes and systems involved in the use of solar thermal and photovoltaic, wind, bioenergy, geothermal, thermoelectric, hydro and ocean technologies. The use of hydrogen as a fuel and technologies to produce and use it. Economic and environmental issues relevant to renewable energy resources. Class will be supplemented with laboratory demonstrations and field trips to visit existing renewable energy systems. **Prerequisite(s):** MER 231 or PHY 122 **Corequisite(s):** ENS 209L **CC:** SET **ISP:** ENS, STS

ENS 222 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** MLT 209 **CC:** LCC, SET, HUM, HUL, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

ENS 247 - Sustainable Infrastructure

Course Units: 1.0 Infrastructure is the backbone of nations. It is a society's inventory of systems and facilities that allow it to function properly and smoothly. This includes, but is not limited to, roads, bridges, tunnels, dams, transit, waterways, ports, aviation, pipelines, transmission lines, rail, parks, and public buildings such as schools, courts, hospitals, and recreational and sport facilities. Infrastructure involves services such as energy, water supply, wastewater treatment, power and gas distribution grids, waste collection, and sewer disposal. Major advances in technology resulted in digital infrastructure that includes communication networks, signal transmission towers, data centers, information repositories, servers/computers, and the Internet. This course explores the progress humanity achieved in developing infrastructure facilities and the present move towards sustainability. Methods, materials, processes, technologies, practices, and operations required to maintain a healthy environment and efficient infrastructure will be examined. The intersection between policies necessary for sustainable infrastructure and political, economic, social, societal, and cultural factors will be emphasized. **CC:** SET, GETS **Lecture/Lab Hours** Four class hours weekly. **ISP:** ENS, STS

ENS 252 - Geoenvironmental Applications

Course Units: 1.0 This course introduces field applications related to soil and water. It explores the natural characteristics and testing of soil as a construction material and as a bearing layer. It covers seepage analysis, aquifers, and well fields. It details the components of containment systems for waste disposal to alleviate environmental pollution and contamination. It also presents the basics of water movement in closed conduits and in open channels, and the development of supply networks. For labs, students gain experience in utilizing industry-standard testing methods of the American Society for Testing and Materials (ASTM). Tests include soil classification, composition, flow and permeability, compaction, compressibility, strength, slope stability, and environmental geotechnology with focus on the Environmental Protection Agency's (EPA) design specifications. **Prerequisite(s):** MTH 112 or higher, and PHY 120 or higher. **Corequisite(s):** ENS 252L **CC:** SCLB **Lecture/Lab Hours** Three class hours and a weekly lab. **ISP:** ENS, STS

ENS 253 - Environmentally Friendly Buildings

Course Units: 1.0 Many energy consumption and adverse environmental effects are attributable to buildings and their use. In this course, through instructions, hands-on experience, computer simulation, and research, the students will become acquainted with the inner workings of the subsystems in buildings: foundations, framings, walls, sidings, roof, electrical systems, lighting, appliances, heating, air-conditioning, ventilation, indoor air quality, basement, crawl space, attic, water and moisture management; plumbing, flooring, finishes, furniture, insulation, xeriscaping, and LEED rating system. The students will become aware of indoor and outdoor environmental issues and the life cycle costs of the existing systems. They will also learn the latest science and technology to reduce the negative effect of these subsystems on the environment. Laboratory: hands-on experience with the above subsystems, site visits, Computer simulations, research, projects, and presentations. There are no prerequisites for this course and it is open to all students. **Corequisite(s):** ENS 253L **CC:** SET, GDQR, GETS, SCLB **ISP:** ENS, STS

ENS 277 - The Water Paradox

Course Units: 1.0 Fresh water is tasteless, odorless, and colorless. These characteristics make water one of the most intriguing materials. It is a necessity for life. A paradox involves features or qualities of contradictory nature. Water is notorious with such qualities. Water is one of the cheapest materials yet it is the most precious commodity known to humanity. Water could be the source of peace and development yet it could be a reason for war and conflict. Water could be a force for good to generate hydropower yet unchecked or unregulated this force could be in the form of destructive floods. Water could be a weapon to combat desertification yet too much thereof could cause erosion and failures. Floods come with loads of mud and silt that charge river deltas and keep them fertile yet weaker floods result in lesser deposits that could threaten river deltas with sea attacks. Water has always been a main reason for people to settle the land yet a shortage thereof could force people to migrate and leave their homeland. This course shows the role water played in the past, is presently playing, and will play in the future in defining communities and societies. **CC:** SET, GETS **ISP:** ENS, STS

ENS 291 - Construction for Humanity

Course Units: 1.0 An interdisciplinary introduction to the technology of construction and the social uses of building by humans. The course will consider types of building materials and their application to domestic housing, castles, cathedrals, palaces, monuments, dams, bridges, tunnels, factories, and office buildings. **Cross-Listed:** HST 291 **CC:** SET, GETS **ISP:** ENS, STS

ENS 299 - Environmental Forensics

Course Units: 1.0 An interdisciplinary course that will present topics detailing the intersection between the environment, ethics, law, society, litigation, policy, economics, pollution/contamination, cleanup, testing, standards, and sustainability. Sources of environmental problems are usually related to emissions, pollution, contamination, and/or waste disposal. Whether the cause is intentional or non-intentional, natural factors or a man-made disaster, or due to normal operation or accident, a crisis ensues and cleanup becomes necessary. This inevitably leads to legal actions and

litigations that rely on experts in conducting scientific investigations to establish the facts surrounding potential controversies. Topics discussed in the course include liability, environmental site assessment, insurance litigation, toxic torts, science tools, sampling & measurements, statistical analysis, chemical fingerprinting, contaminant transport models, and environmental forensic microscopy. The course will illustrate the above points using case studies. **CC:** SET, GETS, WAC **ISP:** ENS, STS

ENS 302 - U.S. Energy Policy

Course Units: 1 Transitions to zero-carbon sources of energy are a critical part of addressing climate change globally. Within various parts of the United States, this transition has been slow and involved a number of political conflicts. Fossil fuel corporations, energy interest groups, and several other actors have fought over the direction of energy policy, with these battles largely occurring at the state and local levels. This class explores these relationships and conflicts to understand the battles over a clean energy transition in the United States and the implications for addressing climate change. **Cross-Listed:** PSC 302 **CC:** SOCS **ISP:** ENS, STS

Geology

GEO 106 - Introduction to Oceanography

Course Units: 1.0 The oceans cover 71% of the planet, 97% of the earth's available water, and 50% of the planet's species, but more than 95% of the ocean remains unexplored. This course covers physical, chemical, and biological oceanography. The course involves an examination of plate tectonics, ocean currents and the forces driving them, the role of the oceans in climate change, coastal processes and sea level change, biological productivity, and the ocean fishing industries. **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 109 - Global Climate Change

Course Units: 1.0

Global climate change is the defining environmental issue of our time. The impacts of climate change disproportionally affect populations who have contributed the least to atmospheric greenhouse gas loading. This course will review the basis for the overwhelming scientific consensus that ongoing warming is not natural; topics include: the radiation balance of Earth, the role of greenhouse gases on Earth's surface temperature, atmospheric and oceanic circulation, and natural oscillators in the climate system. A significant portion of the course is dedicated to understanding natural climatic variability. Students will prepare and submit policy briefs to policy makers at the federal, state, and/or local level that outline ways to mitigate and/or adapt to climate change. Preference given to first and second year students. **Corequisite(s):** GEO-109L
CC: SET, GNPS **ISP:** ENS, STS

GEO 110 - Introduction to Geosciences

Course Units: 1.0 Examination of Earth materials and processes: How our dynamic planet works including plate tectonics, geologic age determination, processes that form the rocks we see at the Earth's surface, development of the stunning variety of landscapes we see, and other topics of contemporary interest including floods, underground water resources, coastal erosion, earthquakes, landslides, volcanoes, and climate change. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 110L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 112 - Environmental Geology

Course Units: 1.0 The increasing interplay between the environment and human activity has profound effects on our landscape and society. This course focuses on anthropogenic issues such as climate change, soil and groundwater

contamination, traditional petroleum resource extraction and dependence, mineral and water resources, and alterative sources of energy. To understand how humans have perturbed the natural environment, it is critical to understand geologic principles and processes. The course also explores natural disasters including earthquakes, volcanoes, hurricanes, landslides, floods, and coastal erosion and their effects on different segments of society, as the impacts of natural disasters are affected by various socio-economic factors. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 112L **CC:** SCLB, GNPS **ISP:** ENS, STS

GEO 117 - Natural Disasters

Course Units: 1.0 An introduction to the geologic processes causing floods, earthquakes, volcanoes, landslides, and other natural hazards and how hazards affect people and society. The course will include discussion of major events in the geologic and historical record as well as future hazard potential. We will assess the risks humans face in different regions, including local hazards, our contribution to geologic hazards, and how we can minimize and cope with future events. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 117L **CC:** SCLB, GNPS, WAC **ISP:** ENS, STS

GEO 120 - The Story of Earth and Life

Course Units: 1.0 An investigation of Earth's dynamic history and evolutionary changes over the past 4.5 billion years. Topics include impacts of climate change, the evolution of life, major changes in the nature of Earth's atmosphere and oceans, and for major mountain building events that have affected the continents as well as the evolutionary development of plant and animal life as recorded in the geologic record. Specific topics include the origin of life, mass extinctions of dinosaurs and other organisms, paleoclimate, and the geologic history of New York State. The link between geology, chemical cycles and life is highlighted, as is the relation of past biogeochemical changes to current global environmental change. Field trips during lab investigate local geologic history and the course may require a weekend field trip. **Prerequisite(s):** Preference given to first and second year students. **Corequisite(s):** GEO 120L **CC:** SCLB, GNPS, SET **ISP:** ENS, STS

GEO 220 - Mineral Science

Course Units: 1.0 Mineral science is foundational for other geology and environmental science courses, as well as many other scientific disciplines that encounter crystalline solids. This class provides students with a solid understanding of minerals, which are the building blocks of all rocks on this and every other planet, and provide most of our industrial resources, many building materials and precious gems. A successful student leaving this class will be able to identify most common minerals when they occur "in the wild" and be familiar with their internal structure and crystal chemistry. The practical use of state-of-the- art analytical techniques common to the study of solid materials is emphasized to elucidate the links between internal crystalline structure and macroscopic physical properties. Students will use the scanning electron microscope, the x-ray diffractometer and the polarizing light microscope. In addition to learning the fundamentals of mineral science, students will gain appreciation for the beauty and symmetry present in the natural world. **Prerequisite(s):** CHM 101 or equivalent and any 100-level geosciences course. **Corequisite(s):** GEO 220L **ISP:** ENS

History

HST 138 - Big History

Course Units: 1.0 An exploration of the past from the big bang to the present, dividing the history of the universe, earth, life, and humanity into periods using very large scales of time. **CC:** SOCS, GCHF **ISP:** ENS, STS

HST 229 - The Adirondacks and American Environmental History

Course Units: 1.0 The Adirondack region of northern New York Slate has been a proving ground for shifting American attitudes toward the environment, from early colonial (ears of wilderness, to intensive resource exploitation, and to efforts to conserve natural resources and preserve distinctive wilderness areas. This course will examine Adirondack environmental history and place it in the context of broader American environmental history. It will leverage Union College's proximity to the region, and the resources of the Union College Kelly Adirondack Center, to offer students both intellectual and experiential engagement with the history of this distinctive place. **CC:** SOCS **ISP:** AMS, ENS, STS

HST 256 - Modern European Ideas

Course Units: 1.0 This course will survey important ideas in modern European history, including the writings of Jean Jacques Rousseau, Voltaire, Montesquieu, Adam Smith, Karl Marx, Charles Darwin, Friedrich Nietzsche, Sigmund Freud, Albert Einstein, Jean-Paul Sartre, Simone de Beauvoir, and Michel Foucault. **CC:** SOCS, WAC, JCHF **ISP:** REE, STS

HST 258 - Nazi Science, Medicine, & Technology

Course Units: 1.0 This course is a history of how science, medicine, and technology interacted with Nazism, beginning with the background of the First World War and Weimar Republic, through the Third Reich, and continuing through to its legacy during the post-Second World War era. This story extends beyond Germany, both because of the international effects of this interaction, and through comparisons with science, medicine, and technology under other regimes and in other cultures. **CC:** SOCS, JCHF, JETS, WAC **ISP:** STS

HST 269 - Epidemics and Empire

Course Units: 1 Do epidemics have different values across the world? Whose bodies appear to be more contagious than others? What is the politics of the creation of these differences? This course will allow us to study the history of epidemics such as cholera, bubonic plague, influenza, HIV/AIDS across the modern world so that we can find answers to these questions: when did disease become racial, when did some deaths matter more than others, and why did these differences become so enduring that we saw them in the 21st century exposure to a pandemic, the Covid 19? **CC:** HUL, SOCS, WAC-R **ISP:** STS

HST 286 - Women in South Asia

Course Units: 1.0 This course takes a historical approach towards the topic of gender and sexuality in South Asia, with a particular, though not exclusive, focus on the history of women in the region. The course has three major goals: first, to analyze the colonial state and its policies with respect to women and gender relations; second, to study gender relations, women's voices and women's movements within the context of nationalist struggles in the post-colonial era; and third, to understand the complexities of trying to recover the "voice" of heterogeneous groups of women in South Asia, divided along lines of caste, class, region, occupation and religion. Study material will include academic texts, films and popular television from the subcontinent. **CC:** LCC, SOCS **ISP:** GSWS, STS

HST 291 - Construction for Humanity

Course Units: 1.0 An interdisciplinary introduction to the technology of construction and the social uses of building by humans. The course considers types of building materials and their application to domestic housing, castles, cathedrals, palaces, monuments, dams, bridges, tunnels, and skyscrapers. **Cross-Listed:** ENS 291 **CC:** SET, SOCS, GETS **ISP:** ENS, STS

HST 292 - History of Computing

Course Units: 1.0 A survey of tools for computation, from number systems and the abacus to contemporary digital computers. The course focuses on the development of modern electronic computers from ENIAC to the present. Study of hardware, software, and the societal effects of computing. **Cross-Listed:** CSC 080 **CC:** SET, SOCS **ISP:** STS

HST 293 - History of Medicine

Course Units: 1.0 This course offers a survey of the history of medicine in the Western world from the ancient Greeks to the present. We will consider several key moments in this history, such as the so-called "Greek miracle" in medicine (Hippocrates), the discovery of blood circulation (William Harvey), and the invention of bacteriology (Louis Pasteur and Robert Koch). In the last two class sessions we will focus more specifically on the history of psychiatry. All of the class readings are primary sources. **CC:** SOCS, WAC **ISP:** STS

HST 299 - The Nuclear Age

Course Units: 1.0 The nuclear age began with the discovery of radioactivity on the eve of the twentieth century and continues on to the present. The technology people have created to study and exploit the energy and particles released by nuclei, including nuclear weapons and nuclear power, but also many other applications in industry and medicine, have defined this age. This course will survey these economic, political, social, and cultural problems facing mankind: the proliferation of nuclear weapons, and human-induced climate change. **CC:** SOCS, GCHF, GETS, WAC **ISP:** ENS, STS

Interdisciplinary

ISC 203 - Exploring Healthcare Through Community

Course Units: 1 A field course combining supervised observation and/or community based learning experiences in various health care settings with the study of problems and means of health care delivery and the social determinants of health. Please see department for approval and application process. **CC:** WAC, JSPE **ISP:** STS

Mathematics

MTH 051 - Cryptology: The Mathematics of Secrecy

Course Units: 1.0 The course will focus on the mathematical aspects of public-key cryptography, the modern science of creating secret ciphers (codes), which is largely based on number theory. Additional topics will be taken from cryptanalysis (the science of breaking secret ciphers) and from contributions that mathematics can make to data security and privacy. **Note:** Not open to students who have passed (or have AP credit for) a college calculus course. **CC:** QMR **ISP:** STS

MTH 056 - History of Mathematics

Course Units: 1.0 Traces the development of mathematical ideas and methods in literate cultures from ancient Egypt and Mesopotamia, to Hellenistic Greece and medieval China, India and the Islamic world, up through the dawn of calculus at the start of the Scientific Revolution in early modern Europe. Topics include the interlinked changes and intercultural transmission of basic numeracy, arithmetic, geometry, trigonometry, algebra, practical computation and approximation, and concepts of the infinitely large and small. **Note:** Not open to students who have passed (or have AP credit for) a college calculus course. **CC:** QMR, JDQR **ISP:** STS

MTH 060 - Mathematics and Politics

Course Units: 1.0 A mathematical treatment (not involving calculus or statistics) of escalation, political power, social choice, and international conflict. No previous study of political science is necessary, but PSC 111 or PSC 112 would be relevant. **Note:** Not open to students who have passed (or have AP credit for) a college calculus course. **Cross-Listed:** PSC 123 **CC:** QMR **ISP:** STS

MTH 221 - Mathematical Cryptology

Course Units: 1.0 An in-depth look at the mathematical theory underlying modern methods to accomplish the secret transmission of messages, as well as other tasks related to data security, privacy, and authentication. **Note:** Not normally open to students who have passed MTH 235 or MTH 051. **Prerequisite(s):** MTH 199 or permission from the Chair. **CC:** GDQR **ISP:** STS

Modern Languages in Translation

MLT 209 - The New Wall of China

Course Units: 1.0 An interdisciplinary overview of dams and development, with specific attention to the socio-cultural, historical, economic, and environmental attributes of a region in China whose geo-political landscape has been dramatically impacted by the construction of the Three Gorges Dam. In providing a context to the dam's construction, students will be introduced to the intricate connections between all the above factors and engineering, technology, and the environment. **Cross-Listed:** ENS 222 **CC:** LCC, SET, HUL, HUM, GCHF, GETS, GSPE **ISP:** AIS, ENS, STS

MLT 208 - Chinese Medicine

Course Units: 1 This course covers the philosophical and practical origins of Chinese medicine to the political, social, and transnational realities of modern day research and practice. It examines qi, yin and yang, health and disease, as foundational concepts in the Chinese cultural worldview. The course provides an overview of different types of traditional medicine, and its focus on nourishing a healthy life, harmonious balance with self and nature. The course compares Chinese and Western approaches to disease and treatment, providing a more nuanced understanding of biomedicine and scientific inquiry. **CC:** HUM, LCC, WAC **ISP:** AIS

Philosophy

PHL 232 - Philosophy of Science

Course Units: 1.0 An introduction to philosophy of science. What are scientific theories, and how are they tested? What is scientific method? What counts as evidence for a scientific theory? What is scientific explanation? We will approach these questions both philosophically and through formal techniques. **CC:** HUM **ISP:** STS

PHL 233 - Early Modern Philosophy

Course Units: 1.0 An examination of some of philosophy's "Greatest Hits," from some of the 17th and 18th centuries' greatest thinkers: Descartes, Leibniz, Locke, Berkeley, Hume, and Kant. We will consider questions like: Is there a God, and how could we know? Is your mind just your brain, or do you have an immaterial soul? What is free will, and are we just fooling ourselves when we think we have it? Does your subjective perception of the world correspond to how it is in reality, and how can you possibly know? Are there universal moral duties, which everyone has an obligation to follow regardless of their personal inclinations? **CC:** HUM **ISP:** STS

PHL 265 - Minds and Machines

Course Units: 1.0 Is it possible to build a computer that effectively simulates human intelligence? If we did so, would the computer really be intelligent, or would it merely seem to be: Would the computer have free will? Do we have free will, or is human freedom merely an illusion? Do we have immaterial souls that can survive the deaths of our bodies and brains? In this advanced introduction to the philosophy of mind, we will consider these and other questions about what it means to have a mind, and about the relationship between mind and the brain. **CC:** HUM **ISP:** STS

PHL 273 - Environmental Ethics

Course Units: 1.0 An exploration of the ethical and philosophical ideas that have shaped attitudes toward the environment and toward non-human species. **CC:** HUM **ISP:** ENS, STS

PHL 274 - Biomedical Ethics

Course Units: 1.0 An introduction to ethical problems in biology and medicine, touching on such issues as reproductive ethics (abortion, cloning), research ethics, the ethics of death and dying (assisted suicide, euthanasia) and similar subjects. **CC:** HUM **ISP:** STS

PHL 374 - Advanced Biomedical Ethics

Course Units: 1.0 An advanced historically based introduction to biomedical ethics. Among the subjects treated will be the relationship between bioethics and traditional medical ethics, the evolution of the discourse, core concepts, models, theories and organizational infrastructure of bioethics, including IRBs and ethics committees. The course is designed to serve as a foundation for graduate work in bioethics and to fulfill the required knowledge competencies recommended by the American Society of Bioethics and Humanities in its 1998 report Core Competencies for Health Care Ethics Consultation. **Prerequisite(s):** Two philosophy courses or permission of the instructor. **CC:** HUM **ISP:** STS

Political Science

PSC 123 - Topics in Mathematical Political Science

Course Units: 1.0 A mathematical treatment (not involving calculus or statistics) of escalation, political power, social choice, and international conflict. **Cross-Listed:** MTH 060 **Prerequisite(s):** No previous study of political science is necessary, but PSC 111 or PSC 112 would be relevant. **CC:** QMR, SOCS **ISP:** STS

PSC 242 - Comparative Climate Change Politics

Course Units: 1 This year we have seen historic temperature records and heatwaves across the globe, the impacts of wildfires around the country and locally, and periods of drought and extreme storms in different areas. These have been attributed to or amplified by anthropogenic climate change, which is one of the biggest challenges facing society in the 21st century. This course examines why climate change is such a "wicked problem," and why it is so difficult to address effectively. The barriers to addressing climate change are not just technical and scientific, but also political and social. Thinking about a future where we as a society mitigate the worst impacts of climate change this century, and adapt to other impacts entails navigating different political systems around the world and balancing various geopolitical and economic interests. Through this course, we will examine how these factors shape or constrain efforts to address climate change in Western Europe, the United States, China, India, and other parts of the world. We will also examine how climate change is impacting human life and security in these countries and other parts of the world, and how it may amplify existing inequalities and other crises. **ISP:** ENS, STS

PSC 263 - US Environmental Policy

Course Units: 1 This course examines the emergence, development, and future directions of environmental policy within the United States. It covers early environmental policy achievements such as the Clean Air Act, the reasons for federal inaction on environmental policy since the 1990s, and new directions for policy action in the 21st century as society understands. **ISP:** ENS, STS

PSC 272 - The Environment, Energy, and US Politics

Course Units: 1.0 Examination of how politics and policymaking affect the air we breathe, the water we drink, and the land we live on. This course will explore key U.S. environmental issues and their scientific underpinnings as well as the connections between these issues and our collective use of natural resources. The course will review major pieces of federal environmental law in the United States and address the policy considerations, justifications, and regulatory frameworks underlying them, as well as the effectiveness of these laws in achieving a healthier environment. The course will also examine the respective roles of Congress, the executive agencies, and the courts in determining environmental policy. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS **ISP:** AMS, ENS, STS

PSC 282 - Health Politics and Policy

Course Units: 1.0 This course will examine the subject of health care policy in the American political system. Students will learn about the roles and functions of key actors, institutions, concepts, and principles as part of a broad overview of American health politics. From this foundation, we will develop a theoretical and practical framework to ground our analysis of current health policy issues and debates. Topics will include finance, insurance, Medicare/Medicaid, the Patient Protection and Affordable Care Act (aka "Obamacare"), prescription drug regulation, private markets, the public interest, ethics, and the role of government. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, WAC **ISP:** AMS, STS

PSC 283 - Social Movements, the Environment and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** SOC 270 **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **ISP:** AMS, ENS, STS

PSC 302 - U.S. Energy Policy

Course Units: 1

Considers the protections afforded to individual rights and liberties by the U.S. Constitution and the Bill of Rights. Topics include freedom of speech and assembly, the right to privacy, religious freedom, equal protection and discrimination, and the due process rights of those accused of crimes. The course proceeds mainly through close examination of Supreme Court cases, considered in their political, historical and legal context. **Cross-Listed:** ENS 302 **Prerequisite(s):** PSC 111 or PSC 112
CC: SOCS, JCHF, JSPE **ISP:** AMS, ENS, STS

PSC 346 - Technologies in Society: Power, Politics and Economy across Industrial Revolutions

Course Units: 1.0 With the advent of the internet, robotics, Big Data, artificial intelligence and machine learning, we are already well into a Third (some say 'Fourth') Industrial Revolution. If history is any guide, this industrial revolution is transforming society, politics and culture in ways both overt and subtle. Further, as it diffuses, it will not be replicated identically across time and space. This course compares the first, second and third industrial revolutions -

selectively focusing on the advent of factories/machines, mass production and information technologies, respectively. For each revolution, the course asks three questions 1) how value is created, 2) who controls and benefits from the new modes of production and consumption, and 3) how it transforms and is transformed by its social and political contexts. Second, it explores variation across different national political economies, most prominently in the advanced countries of England, the US, Europe and Japan, with selective comparisons to other developing countries, including China today. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** SOCS, GCHF, GSPE **ISP:** STS

PSC 349 - Seminar: Comparative Politics

Course Units: 1.0 Selected topics in comparative politics. Content will vary from year to year. Preference to junior and sophomore political science majors. **Prerequisite(s):** PSC 111 or PSC 112 or sophomore standing. **CC:** LCC, SOCS, WAC **ISP:** STS

Psychology

PSY 210 - Neuroscience: Mind & Behavior

Course Units: 1.0 Basic concepts of brain functioning as they relate to psychological phenomena. Including methodology, neuroanatomy, and neurotransmission, important for understanding the mediation of behavior. **Cross-Listed:** BIO 210 **Prerequisite(s):** PSY 100 or (BIO 103 and BIO 104) **CC:** SET **ISP:** STS

PSY 215 - Health Psychology

Course Units: 1.0 This course will examine psychology's role in the etiology, prevention, progression, and treatment of disease. Topics will include mechanisms by which stress and health-related behaviors such as diet, exercise, smoking and substance abuse contribute to illness, doctor-patient communication, problems of medical compliance, cognitive/behavioral treatment techniques, pain management, and health promotion/ disease prevention strategies. **Prerequisite(s):** PSY 100 **ISP:** STS

PSY 242 - Death and Dying

Course Units: 1.0 This course will examine the social and psychological processes that shape the dying and bereavement process. The historical and cultural factors that influence attitudes toward dying and the ethical issues that impact decisions about how we die will be discussed. In addition, this course will discuss end of life care, including hospice, palliative care and pain management; how our health care system treats the dying; mental health interventions; and suicide. There are no prerequisites for this course. **CC:** JSPE, WAC **ISP:** STS

Sociology

SOC 226 - Medical Social Work

Course Units: 1

An overview of the social work role in health care settings as an advocate, practitioner, and leader within interdisciplinary teams. A comprehensive view of the professional values, theories, and methods that social workers utilize in this role to provide advocacy, individual, family and group counseling, educate patients and families, effective crisis intervention, resource referrals and influence public health policies.
Prerequisite(s): SOC 100 **CC:** SOCS **ISP:** STS

SOC 228 - Sociology of Medicine

Course Units: 1.0 Sociological perspectives on health, illness, the health professions and institutions, including studies of the social components of disease and its distribution, doctor-patient relations, and alternative health-care systems. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** STS

SOC 270 - Social Movements, the Environment, and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** PSC 283 **Prerequisite(s):** SOC 100 **ISP:** AMS, ENS, STS

SOC 284 - Sociology of Women & Health

Course Units: 1.0 A critical introduction to the sociological analysis of issues in women's health in the contemporary United States, emphasizing how the key variables of gender, race & class structure access to health & well-being for women in our society. **Prerequisite(s):** SOC 100 **ISP:** AMS, GSWS, STS

SOC 359 - Environmental Policy and Resource Management

Course Units: 1.0 An examination of environmental issues and problems such as acid rain, ocean dumping, and nuclear wastes, and the social forces that shape environmental policies. Students complete an internship with an environmental service theme. **CC:** SOCS **ISP:** ENS, STS

SOC 370 - Public Health

Course Units: 1.0 An overview of public health with emphasis on the impact of large-scale social and cultural forces on the health of the public. The epidemiology of selected diseases, injuries, and the addictive disorders; the health effects of exposure to environmental and work place toxins; the role of nutrition in health. **ISP:** ENS, STS

SOC 372 - Global Health

Course Units: 1.0 An in-depth survey of health care systems and topics from a cross-cultural perspective, of particular interest to health care providers and practitioners and to students interested in comparative health care systems particularly those planning to go on the Health Systems Term Abroad. **ISP:** STS

SOC 374 - Mental Health and Society

Course Units: 1.0 A general introduction to the social scientific study of mental health. Topics include theories of mental illness, epidemiology of mental illness, the social experience of being a mental patient, and contemporary issues in mental health. **CC:** SOCS **ISP:** STS

Sociology

Chair: Professor D. Hill Butler (unitl June 2026)
Faculty: Professors D. Cotter, M. Goldner, I. Kaplan; Associate Professors D. Hill Butler; T. Stablein; Visiting Assistant Professors A. Atterberry; R. Patterson
Staff: M. Kenneally (Administrative Assistant)

Internships and Field Research. The department encourages students to participate in community internships for academic credit under formal supervision by a member of the sociology faculty. Internships include human service organizations and government/policy offices. Students can enroll in SOC 385 , and SOC 450 . In addition, faculty work closely with students who conduct field research; many department majors present research papers at Union College's Steinmetz Symposium.

Sociology (ID), B.A.

Requirements for the Interdepartmental Major:

Eight courses, including:

SOC 100 - Introduction to Sociology

Course Units: 1.0 The basic concepts and perspectives of sociology, including a survey of the major social institutions, social aspects of personality, and the processes of social interaction. **CC:** SOCS, JCHF, JSPE

SOC 300 - Quantitative Methods of Social Research

Course Units: 1.0 Identifying sociopolitical questions and developing hypotheses; designing research instruments (questionnaires); basic statistics and introduction to social science computer analysis. **Prereq/Corequisite(s):** SOC 100 **CC:** SOCS, JDQR, JSPE **ISP:** ENS

SOC 305 - History of Sociological Thought

Course Units: 1.0 The development of classical and contemporary sociological theory. Preference is given to Sociology majors and minors. **Prerequisite(s):** SOC 100 **CC:** SOCS, WAC

An interdepartmental thesis and four sociology electives

Or a two-term Sociology thesis and three electives

Requirements for Honors in Sociology:

The student must fulfill the following requirements: (1) achieve a cumulative index of 3.30 or better; (2) a minimum index of 3.30 in all sociology courses; (3) completion of requirements for the sociology major or an interdepartmental major; (4) three grades of "A" or "A minus" in the major; and (5) at least a grade of "A minus" on the senior thesis. To be eligible for membership in the Alpha Kappa Delta sociology honor society, the student must fulfill all of the above requirements for honors and also have a class standing in the upper third.

Course Selection Guidelines

Course Sequencing for Majors: Majors are encouraged to fulfill the methods and theory requirements SOC 300 and SOC 305 prior to beginning their senior thesis. Students should note that these courses are generally offered only in the fall (SOC 300) and winter (SOC 305) terms each year.

Courses Suitable for Non-Majors: All upper level elective courses are suitable for non-majors who have completed SOC 100.

Course Numbering: SOC 100 or the permission of the instructor is a prerequisite for all other courses in the sociology department unless otherwise noted. While 200-level courses are not "easier" than 300-level courses in terms of workload, the 300-level courses generally assume a greater working knowledge of sociological theory and methods.

Sociology Minor

Requirements for the Minor:

SOC 100 - Introduction to Sociology

Course Units: 1.0 The basic concepts and perspectives of sociology, including a survey of the major social institutions, social aspects of personality, and the processes of social interaction. **CC:** SOCS, JCHF, JSPE

SOC 300 - Quantitative Methods of Social Research

Course Units: 1.0 Identifying sociopolitical questions and developing hypotheses; designing research instruments (questionnaires); basic statistics and introduction to social science computer analysis. **Prereq/Corequisite(s):** SOC 100 **CC:** SOCS, JDQR, JSPE **ISP:** ENS

SOC 305 - History of Sociological Thought

Course Units: 1.0 The development of classical and contemporary sociological theory. Preference is given to Sociology majors and minors. **Prerequisite(s):** SOC 100 **CC:** SOCS, WAC

And three Sociology electives:

SOC 201 - Social Data Analysis

Course Units: 1.0 The analysis of social science data. Emphasis on testing substantive hypotheses by means of computer data processing and statistical techniques. **Cross-Listed:** PSC 220 **Prerequisite(s):** SOC 100 **CC:** QMR, SOCS **ISP:** ENS

SOC 202 - Social Problems, Policy and Pop Culture

Course Units: 1.0 Identification of social forces and cultural images of major social problems (i.e. substance abuse, violence, crime, pollution) and relevant social policies. **Prerequisite(s):** SOC 100 **CC:** SOCS, JCHF, JSPE **ISP:** ENS

SOC 203 - Social Psychology

Course Units: 1.0 **Cross-Listed:** PSY 230 **Prerequisite(s):** PSY 100 is required per the Psychology Department due to its cross-listing with PSY 230 . SOC 100 **will not satisfy** this course alone. **CC:** SOCS

SOC 204 - Social Construction of Deviance

Course Units: 1.0 An examination of "deviance" as a sociological phenomenon, including how the deviant label develops and how those so labeled are treated and controlled. Crime, prostitution, witch persecutions, mental illness, and the shaping of sexual identities and preferences are investigated. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** GSWS

SOC 205 - Social Work and Human Services

Course Units: 1.0 The history of social services and the development of the profession of social work. Social problems and society's response to these problems will be investigated. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** GSWS

SOC 206 - Aging and Society

Course Units: 1.0 The social, psychological, and economic consequences of aging, with an emphasis on successful aging. Social programs and policies for the aged are evaluated. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** GSWS

SOC 207 - Sociology of the Black Religious Experience

Course Units: 1.0 Sociology of Black Religious Experiences is a sociological analysis of a pivotal sector of Black communities, namely Black religious institutions and spiritual encounters. Topics include slave religions, the founding of independent Black churches, the Black musical heritage, Voodoo, and the legacies of Malcom X and Martin Luther King, Jr. and Black Lives Matter issues. The cornerstone of the course is the examination of how Social Justice and spiritual expression are interconnected and socially constructed. **Prerequisite(s):** SOC 100 **CC:** LCC, SOCS, JCHF, JSPE

SOC 209 - Staging Black Feminisms

Course Units: 1.0 This course considers the feminist and anti-racist practices of Black female dramatists, placing their plays within their cultural contexts. We will examine the ways in which these works construct Black feminist histories, genealogies, and cultures while challenging racial and sexual hierarchies in both American society and artistic canons. Each week, students will read a landmark dramatic text by a Black female playwright as well as seminal sociological texts and scholarly studies that contextualize the work within broader artistic and social movements. Through discussions, field trips including attendance at theatrical performances and other cultural events, reading responses, and a final presentations based on individual research, students will hone their thinking about the development of Black female voices in American dramatic literature and society. **Cross-Listed:** ATH 248 , EGL 268 **Prerequisite(s):** SOC 100 or GSW 100 or a 100-level EGL **CC:** SOCS, HUM, HUL, WAC, JCAD, JCHF, JLIT, JSPE

SOC 212 - The American Family and Cross-Cultural Perspectives

Course Units: 1.0 This course examines historical and contemporary patterns of American family from cross-cultural perspectives. We explore the ways in which race/ethnicity, social class, gender roles, conflict and crisis, and the media influence family life. **Prerequisite(s):** SOC 100 **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AFR, AMS, GSWS

SOC 221 - School Social Work

Course Units: 1.0 This course focuses on the optimal use of Social Work in the public school setting as well as the role of the school in delivering human services effectively. Public education has long been considered the great equalizer in American society. This course will analyze the fundamental mission of both Social Work and schools to provide equal access and opportunity for our youngest generation. **Prerequisite(s):** SOC 100 **CC:** SOCS

SOC 222 - Schools and Societies

Course Units: 1.0 Sociological analysis of education as an institution over time and across societies. **Prerequisite(s):** SOC 100 **CC:** SOCS, JSPE **ISP:** AMS

SOC 223 - Sociology of Religion

Course Units: 1.0 The role of religion and religious phenomena from an institutional, organizational, and individual perspective in contemporary and historical context, exploring the interplay between the public and private spheres. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS, REL

SOC 224 - Sociology of Community

Course Units: 1.0 How communities and their residents respond to external environments and internal organization. A series of case studies of urban, rural, and suburban communities and their effect on social behavior is a focus. **Prerequisite(s):** SOC 100 **ISP:** AMS

SOC 225 - Sociology of Work, Occupations, and the Professions

Course Units: 1.0 Sociological analysis of work in a modern industrial society; emphasis on the professions in terms of role behavior, education, socialization, and division of labor.

SOC 228 - Sociology of Medicine

Course Units: 1.0 Sociological perspectives on health, illness, the health professions and institutions, including studies of the social components of disease and its distribution, doctor-patient relations, and alternative health-care systems. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** STS

SOC 230 - Sociology of the Black Community

Course Units: 1.0 This course is an introduction to African American society as revealed in the empirical literature of social sciences. Teaching and Learning in the context of this class will be multidimensional. You will learn about social structure and inequalities through readings, lectures, discussions, popular media examples, and field trips. Using these pedagogical strategies, our class will work as a learning community to explore contemporary issues relating to African American experiences. **Prerequisite(s):** SOC 100 **CC:** LCC **ISP:** AFR, AMS

SOC 231 - Sex and Gender in American Society

Course Units: 1.0 An examination of gender and the social context of the behavior of men and women in contemporary American Society. **Prerequisite(s):** SOC 100 **ISP:** AMS, GSWS

SOC 233 - Race, Class, Gender, and Sexuality

Course Units: 1.0 The issues of gender, race, and class as organizing principles within sociology. The course draws broadly from the critical tradition, which focuses on issues of power, control, opportunity, gender, and economic relations. **Prerequisite(s):** SOC 100 **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AFR, AMS, GSWS

SOC 240 - Political Sociology

Course Units: 1.0 Explores issues of political power, domination, and legitimacy from a sociological perspective. Topics include the creation and maintenance of political power and the impact of political socialization. **Cross-Listed:** PSC 284 **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AFR, AMS, ENS, LAW

SOC 260 - Population and Society: Demographic Trends

Course Units: 1.0 An introduction to the study of human populations and the dynamics of birth, death and migration. Focus on how populations grow and decline and the implications for social policy in areas such as health, aging, social inequality, the environment, immigration and urban life. **Prerequisite(s):** SOC 100 **ISP:** ENS

SOC 261 - Crime and Justice in Society

Course Units: 1.0 The social construction of crime and delinquency as social and legal categories; perspectives on causation and consequences of the societal reaction to crime. **Prerequisite(s):** SOC 100 **ISP:** LAW

SOC 262 - Juvenile Delinquency

Course Units: 1.0 An overview of sociological theory and research concerning juvenile delinquency and youth culture. Analyzes causes of juvenile delinquency, current strategies to control delinquency, perceptions of youth crime and contemporary youth problems. In addition, the course considers the strategies young people historically employ to counter situations of deprivation, alienation, and isolation **Prerequisite(s):** SOC 100 **CC:** SOCS

SOC 270 - Social Movements, the Environment, and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** PSC 283 **Prerequisite(s):** SOC 100 **ISP:** AMS, ENS, STS

SOC 271 - Sociology of Disaster

Course Units: 1.0 This course is an introduction to the sociological analysis of disasters. We will consider how sociologists conceptualize and theorize about disasters and the social and physical damage, death and injury, and economics loss they involve. Variations in the vulnerability of communities and particular social groups to such events will also be examined. **Prerequisite(s):** SOC 100 **ISP:** ENS

SOC 284 - Sociology of Women & Health

Course Units: 1.0 A critical introduction to the sociological analysis of issues in women's health in the contemporary United States, emphasizing how the key variables of gender, race & class structure access to health & well-being for women in our society. **Prerequisite(s):** SOC 100 **ISP:** AMS, GSWS, STS

SOC 285 - Food, Nutrition and Society

Course Units: 1.0 In this course we will explore the social construction of food and its emotional and cultural meaning. How do social structures, such as education, affect how we eat? Included in the topics addressed in this course are how gender, culture, socio-economic status, ethnicity, and media affect our food choices, nutrition, health and health care system. **Prerequisite(s):** SOC 100

SOC 290 - Personality, Media, and Society

Course Units: 1.0 How social roles and group dynamics impact personality and group behavior. Agents of socialization, with particular emphasis on the media and their impact on individual and societal expectations and values, will also be examined. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS

SOC 302 - Qualitative Social Research Methods

Course Units: 1.0 Introduction to qualitative research methods. The course is equally concerned with research design, techniques for gathering data, ethics in research, and the translation of field data into text. **Cross-Listed:** PSC 222 **CC:** WAC-R

SOC 314 - America's War on Drugs: Culture, Conflict, & Social Policy

Course Units: 1.0 A critical evaluation of United States domestic and international drug policy. In this course, students will gain an understanding of domestic and international drug policy, and will apply a sociological perspective to understand the historic and current situational forces which shape America's War on Drugs. We will evaluate current drug control strategies and the inequalities that have emerged as a result. This course also offers an overview of America's international war on drugs and the role it plays in other parts of the world. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS

SOC 340 - Inequality and Mobility: From Penthouse to Poorhouse

Course Units: 1.0 The forms, causes, and consequences of social inequality. Topics include objective and ideological manifestations of trends and patterns in wealth, poverty, mobility, and welfare policy. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS

SOC 346 - Sociology of Black Women's Culture

Course Units: 1.0 This course examines the socialization of black womanhood. We will explore how certain socio-historical norms shape black women's ideas about race, gender, class, sexuality, constructions of femininity, and public and private activism. Understanding the complexities of strategies of resistance to multiple and intersecting oppressions (race, class, gender, sexuality, etc.) forms the focus of the course. **Prerequisite(s):** Suggested: SOC 230 , SOC 233 , GSW 100 **CC:** LCC, SOCS **ISP:** AFR, AMS, GSWS

SOC 359 - Environmental Policy and Resource Management

Course Units: 1.0 An examination of environmental issues and problems such as acid rain, ocean dumping, and nuclear wastes, and the social forces that shape environmental policies. Students complete an internship with an environmental service theme. **CC:** SOCS **ISP:** ENS, STS

SOC 360 - Domestic Violence

Course Units: 1.0 A sociological examination of issues and questions raised by violence within American families. The public definition of family violence, subjective experiences of abusers and victims, social and individual causes and consequences of abuse, complexities and problems of social interventions. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** GSWS

SOC 362 - Family and Community Services

Course Units: 1.0 An examination of the response of community organizations and services to family life. Particular issues will include spouse and child abuse, juvenile delinquency, teenage pregnancy, daycare, and family instability and mental health. Visits to community and human service organizations will also be arranged. **CC:** SOCS **ISP:** GSWS

SOC 364 - Sex and Motherhood

Course Units: 1.0 An analysis of selected issues in the regulation of human reproduction & family building, primarily from sociological and feminist perspectives. Topics such as birth control, abortion, adolescent pregnancy, infertility & pregnancy are examined in historical and cross-cultural contexts with particular focus on the variables of gender, class and race. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS, GSWS

SOC 370 - Public Health

Course Units: 1.0 An overview of public health with emphasis on the impact of large-scale social and cultural forces on the health of the public. The epidemiology of selected diseases, injuries, and the addictive disorders; the health effects of exposure to environmental and work place toxins; the role of nutrition in health. **ISP:** ENS, STS

SOC 372 - Global Health

Course Units: 1.0 An in-depth survey of health care systems and topics from a cross-cultural perspective, of particular interest to health care providers and practitioners and to students interested in comparative health care systems particularly those planning to go on the Health Systems Term Abroad. **ISP:** STS

SOC 374 - Mental Health and Society

Course Units: 1.0 A general introduction to the social scientific study of mental health. Topics include theories of mental illness, epidemiology of mental illness, the social experience of being a mental patient, and contemporary issues in mental health. **CC:** SOCS **ISP:** STS

SOC 385 - Internships for Community Outreach

Course Units: 1.0 Designed to provide the student with work and research experience within a human service organization. **CC:** SOCS, WAC-R **ISP:** ENS

SOC 450 - Environmental Services and Policy

Course Units: 1.0 The focus of this seminar is on the implementation of different environmental policies. Internships or case studies of environmental organizations, including NYS Department of Environmental Conservation, are part of the course. **Prerequisite(s):** SOC 100 **CC:** SOCS, WAC, WAC-R, WS **ISP:** ENS

Sociology, B.A.

Requirements for the Major:

Students complete a twelve course major and are required to take

SOC 100 - Introduction to Sociology

Course Units: 1.0 The basic concepts and perspectives of sociology, including a survey of the major social institutions, social aspects of personality, and the processes of social interaction. **CC:** SOCS, JCHF, JSPE

SOC 300 - Quantitative Methods of Social Research

Course Units: 1.0 Identifying sociopolitical questions and developing hypotheses; designing research instruments (questionnaires); basic statistics and introduction to social science computer analysis. **Prereq/Corequisite(s):** SOC 100 **CC:** SOCS, JDQR, JSPE **ISP:** ENS

SOC 305 - History of Sociological Thought

Course Units: 1.0 The development of classical and contemporary sociological theory. Preference is given to Sociology majors and minors. **Prerequisite(s):** SOC 100 **CC:** SOCS, WAC

Complete a 2 term senior thesis:

SOC 498 - Sociology Senior Thesis 1

Course Units: 0.0 Special project for senior majors. **Prerequisite(s):** Permission of the department chair.

SOC 499 - Sociology Senior Thesis 2

Course Units: 2.0 Special project for senior majors. **Prerequisite(s):** Permission of the department chair. **CC:** WS

Additionally, seven Sociology electives:

SOC 201 - Social Data Analysis

Course Units: 1.0 The analysis of social science data. Emphasis on testing substantive hypotheses by means of computer data processing and statistical techniques. **Cross-Listed:** PSC 220 **Prerequisite(s):** SOC 100 **CC:** QMR, SOCS **ISP:** ENS

SOC 202 - Social Problems, Policy and Pop Culture

Course Units: 1.0 Identification of social forces and cultural images of major social problems (i.e. substance abuse, violence, crime, pollution) and relevant social policies. **Prerequisite(s):** SOC 100 **CC:** SOCS, JCHF, JSPE **ISP:** ENS

SOC 203 - Social Psychology

Course Units: 1.0 **Cross-Listed:** PSY 230 **Prerequisite(s):** PSY 100 is required per the Psychology Department due to its cross-listing with PSY 230 . SOC 100 **will not satisfy** this course alone. **CC:** SOCS

SOC 204 - Social Construction of Deviance

Course Units: 1.0 An examination of "deviance" as a sociological phenomenon, including how the deviant label develops and how those so labeled are treated and controlled. Crime, prostitution, witch persecutions, mental illness, and the shaping of sexual identities and preferences are investigated. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** GSWS

SOC 205 - Social Work and Human Services

Course Units: 1.0 The history of social services and the development of the profession of social work. Social problems and society's response to these problems will be investigated. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** GSWS

SOC 206 - Aging and Society

Course Units: 1.0 The social, psychological, and economic consequences of aging, with an emphasis on successful aging. Social programs and policies for the aged are evaluated. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** GSWS

SOC 207 - Sociology of the Black Religious Experience

Course Units: 1.0 Sociology of Black Religious Experiences is a sociological analysis of a pivotal sector of Black communities, namely Black religious institutions and spiritual encounters. Topics include slave religions, the founding of independent Black churches, the Black musical heritage, Voodoo, and the legacies of Malcom X and Martin Luther King, Jr. and Black Lives Matter issues. The cornerstone of the course is the examination of how Social Justice and spiritual expression are interconnected and socially constructed. **Prerequisite(s):** SOC 100 **CC:** LCC, SOCS, JCHF, JSPE

SOC 209 - Staging Black Feminisms

Course Units: 1.0 This course considers the feminist and anti-racist practices of Black female dramatists, placing their plays within their cultural contexts. We will examine the ways in which these works construct Black feminist histories, genealogies, and cultures while challenging racial and sexual hierarchies in both American society and artistic canons. Each week, students will read a landmark dramatic text by a Black female playwright as well as seminal sociological texts and scholarly studies that contextualize the work within broader artistic and social movements. Through discussions, field trips including attendance at theatrical performances and other cultural events, reading responses, and a final presentations based on individual research, students will hone their thinking about the development of Black female voices in American dramatic literature and society. **Cross-Listed:** ATH 248 , EGL 268 **Prerequisite(s):** SOC 100 or GSW 100 or a 100-level EGL **CC:** SOCS, HUM, HUL, WAC, JCAD, JCHF, JLIT, JSPE

SOC 212 - The American Family and Cross-Cultural Perspectives

Course Units: 1.0 This course examines historical and contemporary patterns of American family from cross-cultural perspectives. We explore the ways in which race/ethnicity, social class, gender roles, conflict and crisis, and the media influence family life. **Prerequisite(s):** SOC 100 **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AFR, AMS, GSWS

SOC 221 - School Social Work

Course Units: 1.0 This course focuses on the optimal use of Social Work in the public school setting as well as the role of the school in delivering human services effectively. Public education has long been considered the great equalizer in American society. This course will analyze the fundamental mission of both Social Work and schools to provide equal access and opportunity for our youngest generation. **Prerequisite(s):** SOC 100 **CC:** SOCS

SOC 222 - Schools and Societies

Course Units: 1.0 Sociological analysis of education as an institution over time and across societies. **Prerequisite(s):** SOC 100 **CC:** SOCS, JSPE **ISP:** AMS

SOC 223 - Sociology of Religion

Course Units: 1.0 The role of religion and religious phenomena from an institutional, organizational, and individual perspective in contemporary and historical context, exploring the interplay between the public and private spheres. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS, REL

SOC 224 - Sociology of Community

Course Units: 1.0 How communities and their residents respond to external environments and internal organization. A series of case studies of urban, rural, and suburban communities and their effect on social behavior is a focus. **Prerequisite(s):** SOC 100 **ISP:** AMS

SOC 225 - Sociology of Work, Occupations, and the Professions

Course Units: 1.0 Sociological analysis of work in a modern industrial society; emphasis on the professions in terms of role behavior, education, socialization, and division of labor.

SOC 228 - Sociology of Medicine

Course Units: 1.0 Sociological perspectives on health, illness, the health professions and institutions, including studies of the social components of disease and its distribution, doctor-patient relations, and alternative health-care systems. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** STS

SOC 230 - Sociology of the Black Community

Course Units: 1.0 This course is an introduction to African American society as revealed in the empirical literature of social sciences. Teaching and Learning in the context of this class will be multidimensional. You will learn about social structure and inequalities through readings, lectures, discussions, popular media examples, and field trips. Using these pedagogical strategies, our class will work as a learning community to explore contemporary issues relating to African American experiences. **Prerequisite(s):** SOC 100 **CC:** LCC **ISP:** AFR, AMS

SOC 231 - Sex and Gender in American Society

Course Units: 1.0 An examination of gender and the social context of the behavior of men and women in contemporary American Society. **Prerequisite(s):** SOC 100 **ISP:** AMS, GSWS

SOC 233 - Race, Class, Gender, and Sexuality

Course Units: 1.0 The issues of gender, race, and class as organizing principles within sociology. The course draws broadly from the critical tradition, which focuses on issues of power, control, opportunity, gender, and economic relations. **Prerequisite(s):** SOC 100 **CC:** LCC, SOCS, JCHF, JSPE **ISP:** AFR, AMS, GSWS

SOC 240 - Political Sociology

Course Units: 1.0 Explores issues of political power, domination, and legitimacy from a sociological perspective. Topics include the creation and maintenance of political power and the impact of political socialization. **Cross-Listed:** PSC 284 **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AFR, AMS, ENS, LAW

SOC 260 - Population and Society: Demographic Trends

Course Units: 1.0 An introduction to the study of human populations and the dynamics of birth, death and migration. Focus on how populations grow and decline and the implications for social policy in areas such as health, aging, social inequality, the environment, immigration and urban life. **Prerequisite(s):** SOC 100 **ISP:** ENS

SOC 261 - Crime and Justice in Society

Course Units: 1.0 The social construction of crime and delinquency as social and legal categories; perspectives on causation and consequences of the societal reaction to crime. **Prerequisite(s):** SOC 100 **ISP:** LAW

SOC 262 - Juvenile Delinquency

Course Units: 1.0 An overview of sociological theory and research concerning juvenile delinquency and youth culture. Analyzes causes of juvenile delinquency, current strategies to control delinquency, perceptions of youth crime and contemporary youth problems. In addition, the course considers the strategies young people historically employ to counter situations of deprivation, alienation, and isolation **Prerequisite(s):** SOC 100 **CC:** SOCS

SOC 270 - Social Movements, the Environment, and Society

Course Units: 1.0 The role of extra-governmental actors in the formation of public policy with a focus on environmental issues. The origins and development of social movements and the differences and similarities among these. Topics include the means by which such groups seek to influence policy and social practice and the outcomes of such attempts. **Cross-Listed:** PSC 283 **Prerequisite(s):** SOC 100 **ISP:** AMS, ENS, STS

SOC 271 - Sociology of Disaster

Course Units: 1.0 This course is an introduction to the sociological analysis of disasters. We will consider how sociologists conceptualize and theorize about disasters and the social and physical damage, death and injury, and economics loss they involve. Variations in the vulnerability of communities and particular social groups to such events will also be examined. **Prerequisite(s):** SOC 100 **ISP:** ENS

SOC 284 - Sociology of Women & Health

Course Units: 1.0 A critical introduction to the sociological analysis of issues in women's health in the contemporary United States, emphasizing how the key variables of gender, race & class structure access to health & well-being for women in our society. **Prerequisite(s):** SOC 100 **ISP:** AMS, GSWS, STS

SOC 285 - Food, Nutrition and Society

Course Units: 1.0 In this course we will explore the social construction of food and its emotional and cultural meaning. How do social structures, such as education, affect how we eat? Included in the topics addressed in this course are how gender, culture, socio-economic status, ethnicity, and media affect our food choices, nutrition, health and health care system. **Prerequisite(s):** SOC 100

SOC 290 - Personality, Media, and Society

Course Units: 1.0 How social roles and group dynamics impact personality and group behavior. Agents of socialization, with particular emphasis on the media and their impact on individual and societal expectations and values, will also be examined. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS

SOC 302 - Qualitative Social Research Methods

Course Units: 1.0 Introduction to qualitative research methods. The course is equally concerned with research design, techniques for gathering data, ethics in research, and the translation of field data into text. **Cross-Listed:** PSC 222 **CC:** WAC-R

SOC 314 - America's War on Drugs: Culture, Conflict, & Social Policy

Course Units: 1.0 A critical evaluation of United States domestic and international drug policy. In this course, students will gain an understanding of domestic and international drug policy, and will apply a sociological perspective to understand the historic and current situational forces which shape America's War on Drugs. We will evaluate current drug control strategies and the inequalities that have emerged as a result. This course also offers an overview of America's international war on drugs and the role it plays in other parts of the world. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS

SOC 340 - Inequality and Mobility: From Penthouse to Poorhouse

Course Units: 1.0 The forms, causes, and consequences of social inequality. Topics include objective and ideological manifestations of trends and patterns in wealth, poverty, mobility, and welfare policy. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS

SOC 346 - Sociology of Black Women's Culture

Course Units: 1.0 This course examines the socialization of black womanhood. We will explore how certain socio-historical norms shape black women's ideas about race, gender, class, sexuality, constructions of femininity, and public and private activism. Understanding the complexities of strategies of resistance to multiple and intersecting oppressions (race, class, gender, sexuality, etc.) forms the focus of the course. **Prerequisite(s):** Suggested: SOC 230 , SOC 233 , GSW 100 **CC:** LCC, SOCS **ISP:** AFR, AMS, GSWS

SOC 359 - Environmental Policy and Resource Management

Course Units: 1.0 An examination of environmental issues and problems such as acid rain, ocean dumping, and nuclear wastes, and the social forces that shape environmental policies. Students complete an internship with an environmental service theme. **CC:** SOCS **ISP:** ENS, STS

SOC 360 - Domestic Violence

Course Units: 1.0 A sociological examination of issues and questions raised by violence within American families. The public definition of family violence, subjective experiences of abusers and victims, social and individual causes and consequences of abuse, complexities and problems of social interventions. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** GSWS

SOC 362 - Family and Community Services

Course Units: 1.0 An examination of the response of community organizations and services to family life. Particular issues will include spouse and child abuse, juvenile delinquency, teenage pregnancy, daycare, and family instability and mental health. Visits to community and human service organizations will also be arranged. **CC:** SOCS **ISP:** GSWS

SOC 364 - Sex and Motherhood

Course Units: 1.0 An analysis of selected issues in the regulation of human reproduction & family building, primarily from sociological and feminist perspectives. Topics such as birth control, abortion, adolescent pregnancy, infertility &

pregnancy are examined in historical and cross-cultural contexts with particular focus on the variables of gender, class and race. **Prerequisite(s):** SOC 100 **CC:** SOCS **ISP:** AMS, GSWS

SOC 370 - Public Health

Course Units: 1.0 An overview of public health with emphasis on the impact of large-scale social and cultural forces on the health of the public. The epidemiology of selected diseases, injuries, and the addictive disorders; the health effects of exposure to environmental and work place toxins; the role of nutrition in health. **ISP:** ENS, STS

SOC 372 - Global Health

Course Units: 1.0 An in-depth survey of health care systems and topics from a cross-cultural perspective, of particular interest to health care providers and practitioners and to students interested in comparative health care systems particularly those planning to go on the Health Systems Term Abroad. **ISP:** STS

SOC 374 - Mental Health and Society

Course Units: 1.0 A general introduction to the social scientific study of mental health. Topics include theories of mental illness, epidemiology of mental illness, the social experience of being a mental patient, and contemporary issues in mental health. **CC:** SOCS **ISP:** STS

SOC 385 - Internships for Community Outreach

Course Units: 1.0 Designed to provide the student with work and research experience within a human service organization. **CC:** SOCS, WAC-R **ISP:** ENS

SOC 450 - Environmental Services and Policy

Course Units: 1.0 The focus of this seminar is on the implementation of different environmental policies. Internships or case studies of environmental organizations, including NYS Department of Environmental Conservation, are part of the course. **Prerequisite(s):** SOC 100 **CC:** SOCS, WAC, WAC-R, WS **ISP:** ENS

Note(s):

Majors may include within their seven remaining elective courses up to two cognates from political science, psychology, economics, history, philosophy and/or anthropology with approval of the department advisor. Courses in the Sociology Department include a variety of choices in areas such as community, family, health and medicine, public policy, the environment, diversity and change and crime and justice.

Requirements for Honors in Sociology:

The student must fulfill the following requirements: (1) achieve a cumulative index of 3.30 or better; (2) a minimum index of 3.30 in all sociology courses; (3) completion of requirements for the sociology major or an interdepartmental major; (4) three grades of "A" or "A minus" in the major; and (5) at least a grade of "A minus" on the senior thesis. To be eligible for membership in the Alpha Kappa Delta sociology honor society, the student must fulfill all of the above requirements for honors and also have a class standing in the upper third.

Course Selection Guidelines

Course Sequencing for Majors: Majors are encouraged to fulfill the methods and theory requirements SOC 300 and SOC 305 prior to beginning their senior thesis. Students should note that these courses are generally offered only in the fall (SOC 300) and winter (SOC 305) terms each year.

Courses Suitable for Non-Majors: All upper level elective courses are suitable for non-majors who have completed SOC 100.

Course Numbering: SOC 100 or the permission of the instructor is a prerequisite for all other courses in the sociology department unless otherwise noted. While 200-level courses are not "easier" than 300-level courses in terms of workload, the 300-level courses generally assume a greater working knowledge of sociological theory and methods.

Theater & Dance

Dance Minor

Requirements for the Minor:

A total of 6 credits are required to achieve a minor in dance.

Students must take:

ADA 130 - The Dance Experience

Course Units: 1.0 This exploratory course introduces the many facets of the art of making dances. Through lectures, workshops and performances, students discover choreographic tools, new dance vocabulary and inner skills. Special emphasis on creative abilities, built on trust, and performances. Students work as choreographers in individual and collective dance pieces to be performed publicly at the Steinmetz Symposium and An Intimate Afternoon with Dancers. **CC:** HUM

One History course:

ADA 140 - American Musical Theater and Dance

Course Units: 1.0 This course is an introduction to the American Musical from Vaudeville and Minstrel Shows to today's contemporary Broadway shows. Through lectures, video viewing, and workshops, students learn the historical background that focuses on the work of lyricists, composers, dancers, singers, choreographers, directors and producers. This unique American entertainment art form reflects American diversity and culture, changing times, values and trends. **Cross-Listed:** ATH 140 **CC:** LCC, HUM **ISP:** AFR, AMS

or

ADA 142 - Dance in America

Course Units: 1.0 An introduction to dance in America from Native American to contemporary diverse styles, approached through lecture, video viewing, and dance workshops. A voyage through time from the French Court with the birth of Classical Dance through the twentieth century with the development of Modern and Post-Modern Dance. Study of the advent of new music and dance with the African American heritage and American contributions towards

social dancing. Special emphasis on historical background and international influences, studying the dancers, choreographers, traditions, and trends that influence the making of contemporary dance as an art and form of expression. **CC:** LCC, HUM **ISP:** AFR, AMS

or

ADA 153 - Histoire de la danse, Danse de l'histoire/History of Dance, Dance of History

Course Units: 1.0 Examination of Western European dance and dance texts as revelatory of broader historical and cultural patterns, with special analyses of dance as a key tool of nation building (as with the court of Louis XIV) and/or a central medium of artistic creation (as in 1920's Paris). Primary focus on France as creator, user, and potential abuser of dance's power, but some attention given other European models (Berlin, St. Petersburg, London). Readings from theoreticians, historians, and dance litterateurs (Moliere, Gautier, Cocteau). **Cross-Listed:** FRN 421 and MLT 211 **CC:** HUL, LCC **ISP:** REE

One dance elective (in consultation with the Director of Dance):

ADA 150 - Staging Exploration in Theater and Dance

Course Units: 1.0 This course is based on the close examination of a particular period or theme of multidisciplinary artistic production that offers students an immersion into important developments in performative expressions. This course explores dynamic movements in the artistic avant-garde, its historical background, and its principal creators in theater, dance and associated performing arts, through discussions, lectures, studio work, and collaborative creation. The resulting exploration is produced and performed at the Winter Dance Concert series. **Cross-Listed:** ATH 150 **CC:** HUM, GCAD

or

ADA 160 - Dance for the Camera

Course Units: 0.0 This course focuses on the process of making dances for the camera, uniting the various aesthetics of movement and the practical elements of recording visual material. Since the arrival of the digital chip, the light camera, and various computer programs, we have seen a revolution in dances created for the screen, Slideroom, YouTube or Vimeos. Methods will focus on conceptualized movement, phrase development, compositional tools and framing, as well as design production. Through discussions, decision-making, individual and collaborative work, the designated choreographer/director, crew and camera person will develop a sense of craft used in the art of making dances for video viewing. The student challenge will be to invent a unique dance language to communicate ideas, intentions and feelings through the medium of video making. Dance moves - with their complexity, richness, rhythmical and compelling imagery - will be at the core of their creative work. **CC:** HUM

or

GPM 354T - WMC Balinese Performing Arts Mini-term

Course Units: 1.0 This mini-term focuses on the study of the performing Arts of Bali. Students will have daily group instruction with Masters Performers of gamelan (the Balinese orchestra of gongs and xylophones) and dance, as well as additional lessons in an art form one's choosing (e.g. painting, drumming, mask making, etc.). This instruction will culminate in a final performance. Students will also visit many important artistic and ritual locations, attend professional shows and meet with local Balinese people in a variety of contexts. No previous experience is required. **CC:** LCC

One credit must be pursued from:

ADA 295H - Choreography Honors 1

Course Units: 0.0 This course seeks to develop students' choreographic potential through research and exploratory exercises. Methods focus on concept, phrase development, compositional tools, design and artistic presentation. Through discussions, decision-making, individual and group work, the choreographer develops a sense of craft used in the art of making dances. A weekly dance technique class is required. **Prerequisite(s):** ADA 130 Dance Experience or by Dance Director's permission. **CC:** HUM

and

ADA 296H - Choreography Honors 2

Course Units: 1.0 Students create choreography and work in collaboration with dancers, designers or any inter-disciplinary artists to fulfill their creative objectives. The final dance piece is presented publicly in the Dance Concert series (winter) or Steinmetz Dance Performance (spring). A weekly dance technique class is required. **Prerequisite(s):** ADA 295H **CC:** HUM

or

ADA 350 - Choreography

Course Units: 1.0 This course emphasizes the creation of a dance piece in collaboration with selected dancers, designers (costumes, props or projections), musicians or any interdisciplinary artists. Students must create a group choreography that will be innovative, express their own style, a specific theme or concept. Students will act as artistic directors, overseeing their creation and being in charge of their collaborators. Their choreography will be presented either in the Winter Dance Concert series or at the Steinmetz Symposium. A weekly technical dance class is required. **Prerequisite(s):** ADA 130 **CC:** HUM

or

ADA 490 - Dance Project 1

Course Units: 1.0 Students can elect to pursue a specific area of study. Subjects might include researching dance styles or techniques, a choreographer or dancer's life and achievements, a dance craze as well as creating a specific dance piece. Their research can be presented through workshops, the restaging of a masterpiece or the creation of a dance piece, the making of a dance film or documentary.

Two full practicum credits are also required in dance technique over six terms of study

Dance Technique Classes:

For dance minors, students must complete one full year of practicum credit in a specific dance form. For their second full practicum credit, however, minors must pursue two terms of classes in a different dance style as well as the practicum ADA 051, which will be held winter term and entails participation in the Winter Dance Concert series. To gain transcript recognition for dance technique classes, students must register no later than the two-week add/drop period, and achieve a passing grade from the faculty instructor. Requests to register for practicum transcript recognition after the add-drop period will not be honored. If a student registers for more than one dance practicum per term, only one practicum will count towards the three-course sequence, which is required to earn one course credit. Minors are required to complete two full credits of practicum. Such requests are made to the registrar during the senior year transcript audit (or its equivalent for those who plan to graduate early). Each full dance practicum credit is accumulated from three previous passing grades (any combination of theater and dance practicum). No more than two such

graduation credits are available, whatever the discipline (music, theater, or dance). Students are advised to select full practicum credits in whichever area best suits their academic program.

Theater (ID), B.A.

Requirements for the Interdepartmental Major:

Eight courses plus one full theater practicum credit including and one experience in the Art of Stage Management. Students are encouraged to audition for or work on term productions. The interdepartmental major includes:

ATH 110 - Stage Craft 1

Course Units: 1.0 This course seeks to introduce students to the language and practice of technical theater. It covers the basics of tools, hardware, theatrical construction, safety practices, lighting, painting and the physical space. Additional weekly lab hours are required for the hands-on experience of building the department production and are scheduled once the term begins at the mutual convenience of student and instructor. **CC:** HUM **Note:** Required for Theater Majors and Minors.

ATH 112 - Acting 1

Course Units: 1.0 Designed to engage the aspiring actor in developing performance power, technique, and discipline, including self-discovery, in-depth character exploration, and textual analysis. Understanding what goes into actions, objectives, and given circumstances will be part of the process of beginning monologue and scene work. Appreciation of theater as a profession through learning how to prepare and see other performances. It will require an open heart and mind in order to have the opportunity to take risks, challenge oneself, and be creative. **CC:** HUM **Note:** Required for Theater Majors and Minors.

ATH 113 - Introduction to Stage Design

Course Units: 1.0 This studio course is an introduction to the principles and practices of theatrical scenic design. Students will explore theatrical design techniques and how these contribute to the collaborative storytelling process and the relationship of theatrical design to film, architecture and animation. The course will include introduction to design fundamentals, script analysis, visual research, architecture, hand drafting, fast rendering techniques, perspective rendering and model building **CC:** HUM **Note:** Satisfies design requirement for Theater Majors and Minors.

ATH 125 - Improvisation 1

Course Units: 1.0 This class allows the individual and the group to explore through intuitive creative ways a physical, emotional and spontaneous form of approaching theater. This course prepares the performer for advanced training techniques by focusing attention on freeing the body to communicate. Emphasis will be placed on spatial awareness and control, physical characterization and developing performing skills in gestural relationships, kinesthetic response, tempo and character dynamics. Theater games and a variety of improvisation methodologies will be used in the practice of performance discipline, risk taking and collaboration on stage. **CC:** HUM

ATH 151 - Directing 1

Course Units: 1.0 Students explore the process of bringing the script and the director's concept to the stage by working with actors through casting, script analysis, rehearsal, and performance. Previous acting experience (in class or in production) required. **CC:** HUM

ATH 231 - Voice for the Stage

Course Units: 1.0 Sighs, sobs, moans, groans, and growls: This studio performance course explores the human connection between the needs of our physical-emotional body and our desire to make sound. This course will provide foundational techniques for speaking and singing on stage, including the integration of our emotionally rich inner life with an unrestricted airflow. Class work will include daily physical and vocal explorations, as well as in-class presentation of dramatic literature, songs, improvisations, and found text. This class is appropriate for all levels of acting or singing experience, beginners and seasoned performers are equally welcome, although a desire to vocalize with others is necessary. **CC:** HUM

ATH 342 - Acting 2

Course Units: 1.0 Students review skills learned in earlier acting classes with a higher degree of emphasis on performance. Professional workshops in acting technique are offered such as Meisner, Chekhov, or Grotowski techniques. Focus is on in-depth textual analysis - discovering in the inner workings of a play, of scenes and monologues and the making of character choices. Students will gain an understanding the work of a professional actor, and the discipline of the theater business. **Prerequisite(s):** ATH 112 or permission of the instructor. **CC:** HUM,

ATH 230 - Movement for Actors

Course Units: 1.0 Development of the actor's body as an expressive instrument. Yoga/centering exercises, acrobatics and circus techniques are explored to achieve a flexible, free, strong and restfully alert body on stage. Contemporary and period character development through movement. **CC:** HUM

or

ATH 128 - Stage Combat

Course Units: 1.0 An exploration of physical violence on the stage from the classical to the contemporary. The basic techniques of unarmed Stage Combat will be introduced as well the use of the Medieval Quarterstaff and Elizabethan Rapier. Students at the conclusion of the course will be expected to be able choreograph a safely executed fight for the stage from an existing play. **CC:** HUM

Note(s):

Highly recommended are additional electives/dance technique classes.

Requirements for Honors in Theater:

Candidates must satisfy college qualifications for honors, hold at least a 3.5 or better GPA in department courses and receive a grade of at least "A minus" for their Senior Project. Requires Faculty approval.

Theater Minor

Requirements for the Minor:

Six courses plus one full theater practicum credit. (Total 7 credits)

Required Courses:

ATH 110 - Stage Craft 1

Course Units: 1.0 This course seeks to introduce students to the language and practice of technical theater. It covers the basics of tools, hardware, theatrical construction, safety practices, lighting, painting and the physical space. Additional weekly lab hours are required for the hands-on experience of building the department production and are scheduled once the term begins at the mutual convenience of student and instructor. **CC:** HUM **Note:** Required for Theater Majors and Minors.

ATH 243 - History of Theater

Course Units: 1.0 An investigation of the development of Western theater from its roots in Greek tragedy to the contemporary with special focus on the works of Sophocles, Plautus, Medieval Theater, the Commedia dell'arte, Elizabethan theater, Moliere, Restoration, and 19th century American theater. This class concentrates on the nature of theater-in-performance including the physical development of theater spaces, staging concepts, and the artist-audience relationship") to the following: "This course is an investigation of the development of theatrical history, literature, and theory in the Western world from the ancient Greeks to the present day, focusing particularly on works and traditions that have influenced our own theatrical practice. We will examine the ways performance techniques have changed along with the economic, political, and intellectual factors that have also shaped other aspects of society. This class concentrates on the nature of theater-in-performance including the physical development of theater spaces, staging concepts, and the artist-audience relationship. **CC:** HUL, HUM, LCC, JCAD, JCHF, WAC, WAC-R

or

ATH 348 - Global Performance Tradition

Course Units: 1.0 This course is a survey of non western theatrical and performance forms, engaging with practices and traditions from a global perspective. We will examine a variety of traditions likely including Japanese Noh, Kyogen, Kabuki, and Bunraku; Chinese Xiqu (Chinese opera), Indonesian Wayang and Topeng, Indian Kathakali dance-drama, Persian Ta'ziyeh, Arabian shadow puppetry, Native American Indian Potlatch ceremonies, West African Griot (praise singing), and Caribbean carnival performance and Latin American protest theater. To conduct our examinations of these diverse traditions, we will read firsthand accounts, critical and theoretical literature, and theatrical texts, and interrogate the intersections between these performance traditions and social culture, including both political structures and religious ceremony and ritual. **CC:** LCC, HUL, JCHF, JLIT, WAC, WAC-R **ISP:** AIS, REL

One Performance Course:

Chosen from the following, or other approved courses

ATH 112 - Acting 1

Course Units: 1.0 Designed to engage the aspiring actor in developing performance power, technique, and discipline, including self-discovery, in-depth character exploration, and textual analysis. Understanding what goes into actions, objectives, and given circumstances will be part of the process of beginning monologue and scene work. Appreciation of theater as a profession through learning how to prepare and see other performances. It will require an open heart and mind in order to have the opportunity to take risks, challenge oneself, and be creative. **CC:** HUM **Note:** Required for Theater Majors and Minors.

ATH 125 - Improvisation 1

Course Units: 1.0 This class allows the individual and the group to explore through intuitive creative ways a physical, emotional and spontaneous form of approaching theater. This course prepares the performer for advanced training techniques by focusing attention on freeing the body to communicate. Emphasis will be placed on spatial awareness and control, physical characterization and developing performing skills in gestural relationships, kinesthetic response,

tempo and character dynamics. Theater games and a variety of improvisation methodologies will be used in the practice of performance discipline, risk taking and collaboration on stage. **CC:** HUM

ATH 223 - Voice & Movement

Course Units: 1 Voice & Movement I introduces students to the fundamentals of vocal production and movement as components of an actor's instrument. Through a combination of exercises and in-class performances, students will learn how stress and habitual use impact the vocal mechanism and their movement patterns on stage. Students will work toward voices and bodies that are available, expressive, truthful, spontaneous and capable of variety. Practitioners and methods referenced in this course include Kristin Linklater, Rudolph Laban, Jacques Lecoq, Viewpoints, butoh, yoga and the Alexander Technique.

ATH 233 - Performance Devising

Course Units: 1

ATH 235 - Physical Theater

Course Units: 1.0 This course emphasizes the development of the actor's body as an expressive instrument. Primarily focus is on the actor's physical presence, actions over language, and use of gestures. Actors/dancers will be trained in techniques that focus on the building of strength, flexibility, improvisation targeting relationships and interplay between performers, and visual elements to create scenic imagery. Workshops pursue a wide range of styles, approaches and aesthetics including dance-theater, movement theater, mask, use of live camera to project performers' actions and interactions with props and scenery. We review a variety of styles of physical expression to broaden theatrical actions. **CC:** HUM

One Design Course:

ATH 111 - Introduction to Design

Course Units: 1 This course will acquaint the student with the art and practice of design for live performances. It will explore the Designers' roles, and the process necessary to realize their visions on the stage. We will learn the basic building blocks of artistic design, and how those can be applied primarily to sets, lighting, and costumes, with some discussion of sound and projections as well. **CC:** JCAD **Note:** Recommended for Majors and Minors

ATH 113 - Introduction to Stage Design

Course Units: 1.0 This studio course is an introduction to the principles and practices of theatrical scenic design. Students will explore theatrical design techniques and how these contribute to the collaborative storytelling process and the relationship of theatrical design to film, architecture and animation. The course will include introduction to design fundamentals, script analysis, visual research, architecture, hand drafting, fast rendering techniques, perspective rendering and model building **CC:** HUM **Note:** Satisfies design requirement for Theater Majors and Minors.

ATH 117 - Fundamentals of Stage Lighting Design

Course Units: 1.0 This course seeks to introduce students to the world of stage lighting design and technology. Initial emphasis will be on electrical theory, photometrics and the wide variety of fixtures and control boards in use in the modern theater. The class will then progress to basic lighting theory and analysis of lighting techniques. In the final weeks, the class will actively participate in the design, hang, focus and programming of the lighting for a departmental production. **CC:** HUM **ISP:** FLM **Note:** Satisfies design requirements for Theater Majors and Minors.

ATH 122 - Introduction to Costume Design

Course Units: 1.0 An exploration into the principles and practice of stage costume design including an historical survey of clothes and fashion. The course will be geared toward practical application of design theory and collaboration in conjunction with directors and other designers. **CC:** HUM, JCAD, JLIT **Note:** Satisfies design requirement for Theater Majors and Minors.

An experience in the art of Stage Management:
This is fulfilled through completing an ATH 052 practicum in the area of stage management or taking ATH 124 or ATH 494.

Electives:
Also required are two electives from within the Department of Theater and Dance, chosen in consultation with the student's Minor advisor. Minors are encouraged to audition for or work on term productions.
Note: A maximum of two credits of practicum courses may be used to count towards graduation.

Theater, B.A.

Requirements for the Major:

Twelve courses plus one full theater practicum credit. (Total 13 credits). Students often chooose to focus their studies in one of three areas: Performance, Design and Technology or Directing and Theory.

ATH 110 - Stage Craft 1

Course Units: 1.0 This course seeks to introduce students to the language and practice of technical theater. It covers the basics of tools, hardware, theatrical construction, safety practices, lighting, painting and the physical space. Additional weekly lab hours are required for the hands-on experience of building the department production and are scheduled once the term begins at the mutual convenience of student and instructor. **CC:** HUM **Note:** Required for Theater Majors and Minors.

ATH 111 - Introduction to Design

Course Units: 1 This course will acquaint the student with the art and practice of design for live performances. It will explore the Designers' roles, and the process necessary to realize their visions on the stage. We will learn the basic building blocks of artistic design, and how those can be applied primarily to sets, lighting, and costumes, with some discussion of sound and projections as well. **CC:** JCAD **Note:** Recommended for Majors and Minors

Or other approved design course: ATH 113, ATH 117 or ATH 122.

ATH 112 - Acting 1

Course Units: 1.0 Designed to engage the aspiring actor in developing performance power, technique, and discipline, including self-discovery, in-depth character exploration, and textual analysis. Understanding what goes into actions, objectives, and given circumstances will be part of the process of beginning monologue and scene work. Appreciation of theater as a profession through learning how to prepare and see other performances. It will require an open heart and mind in order to have the opportunity to take risks, challenge oneself, and be creative. **CC:** HUM **Note:** Required for Theater Majors and Minors.

ATH 243 - History of Theater

Course Units: 1.0 An investigation of the development of Western theater from its roots in Greek tragedy to the contemporary with special focus on the works of Sophocles, Plautus, Medieval Theater, the Commedia dell'arte,

Elizabethan theater, Moliere, Restoration, and 19th century American theater. This class concentrates on the nature of theater-in-performance including the physical development of theater spaces, staging concepts, and the artist-audience relationship") to the following: "This course is an investigation of the development of theatrical history, literature, and theory in the Western world from the ancient Greeks to the present day, focusing particularly on works and traditions that have influenced our own theatrical practice. We will examine the ways performance techniques have changed along with the economic, political, and intellectual factors that have also shaped other aspects of society. This class concentrates on the nature of theater-in-performance including the physical development of theater spaces, staging concepts, and the artist-audience relationship. **CC:** HUL, HUM, LCC, JCAD, JCHF, WAC, WAC-R

or

ATH 348 - Global Performance Tradition

Course Units: 1.0 This course is a survey of non western theatrical and performance forms, engaging with practices and traditions from a global perspective. We will examine a variety of traditions likely including
Japanese Noh, Kyogen, Kabuki, and Bunraku; Chinese Xiqu (Chinese opera), Indonesian Wayang and Topeng, Indian Kathakali dance-drama, Persian Ta'ziyeh, Arabian shadow puppetry, Native American Indian Potlatch ceremonies, West African Griot (praise singing), and Caribbean carnival performance and Latin American protest theater. To conduct our examinations of these diverse traditions, we will read firsthand accounts, critical and theoretical literature, and theatrical texts, and interrogate the intersections between these performance traditions and social culture, including both political structures and religious ceremony and ritual. **CC:** LCC, HUL, JCHF, JLIT, WAC, WAC-R **ISP:** AIS, REL

ATH 497 - Theater One Term Senior Project

Course Units: 1.0 As a requirement of the major, students propose this one-term project as a "capstone" study in an area of concentration in theater studies. This project is designed in consultation with the faculty Coordinator of Senior Projects and must be proposed at least a term in advance. Projects may include research, practical production experience or independent projects in theater. **Prerequisite(s):** By permission of the faculty. **CC:** WAC/S, WS

Further Requirements:

An experience in Stage Management, generally fulfilled through either ATH 124: Stage Management for Live Performance and the ATH 052 practicum in the area of stage management

Or

ATH 494 - Stage Management: Theater Independent Study

Course Units: 1.0 For the student who has demonstrated the ability to work independently, this one term project may be proposed or is assigned in conjunction with Stage Management duties for a faculty-directed term production. Students are generally expected to have successfully completed a practicum credit as an assistant stage manager prior to requesting this independent study. Projects are assigned or must be proposed at least a term in advance. By permission of faculty only. **Prerequisite(s):** Prior Completion of ATH 052 or ATH 124 and Instructor permission required.

This consists of any combination of ATH 050, ADA 051, ATH 052, ATH 053, or ATH 054.

Note: Students are encouraged to take practicums and courses in Dance as well as Theater, and may use a Dance practicum towards their full practicum credit requirement. A maximum of two full credits of practicum courses may be used to count towards graduation, and you will only receive credit for one practicum course per term, regardless of how many practicum courses you complete during that term.

Electives:

Also required are six credits electives from within the Department of Theater and Dance, chosen in consultation with the student's Major advisor. Majors are expected to audition for or work on term productions.

Requirements for Honors in Theater:

Candidates must satisfy college qualifications for honors, hold at least a 3.5 or better GPA in department courses and receive a grade of at least "A minus" for their Senior Project. Requires Faculty approval.

Visual Arts: Art History and Studio Fine Arts

Chair: Associate Professor D. Ogawa
Faculty: Professors M. Benjamin, C. Duncan, L. Matthew; Associate Professors L. Cox, S. Lullo, L. Nemett, D. Ogawa, F. Orellana
Staff: F. Rapant (Photography and Exhibitions Technician), J. Shaefer (Sculpture Studio Technician), V. Rotondi (Program Administrative Coordinator), C. Jones (Office Assistant)

Visual Arts (Art History Concentration ID), B.A.

Requirements for the Interdepartmental Major:

A minimum of eight courses in the Visual Arts Department, of which seven must be in Art History including four 100 or 200-numbered courses which must include three of the four cultural areas: The Americas, Asia, Europe, Middle East/Central Asia; three courses from the 300 and 400 numbered upper level courses. Students also take at least one course in Studio Art. All proposals for interdepartmental majors including Art History must be approved by the Art History faculty.

Requirements for Honors in Art History ID:

To qualify for departmental honors, a student must fulfill the following requirements: (1) cumulative grade point average of 3.3; (2) a grade point average of 3.3 in the Art History concentration; (3) approval by both departments of the ID thesis, according to departmental guidelines and consultation with advisors from both departments; (4) successful completion of a two-term senior honors thesis ("A" or "A-minus"); (5) approval by a second faculty reader; (6) an oral presentation at The Steinmetz Symposium in the spring term of senior year; and (7) a copy of the thesis must be left with the department's collection and College archives. Having fulfilled the above, the student must then be nominated by the department for honors. Further guidelines for the senior thesis and departmental honors are available from the Art History faculty.

Visual Arts (Art History Concentration), B.A.

Requirements for the Major:

Art History majors take twelve courses, including six 100 or 200 numbered courses which must include three of the four cultural areas: The Americas, Asia, Europe, Middle East/Central Asia; four 300 or 400 numbered courses. Art History majors also take two Studio Art courses. Students planning to do a two-term senior honors thesis should take a 300 or 400 numbered course in the junior year; while those not doing an honors thesis may take a 300 or 400 WAC/WS numbered course in the senior year to fulfill the WS (senior writing requirement). Majors concentrating in Art History are encouraged to begin or continue the study of at least one other language at Union.

To pursue a senior honors thesis, Art History majors should successfully complete a junior qualifying paper ("B plus" or above) in the context of an upper-level (300's or 400's) Art History course, which will be reviewed by the thesis advisor. Art History majors who intend to write a two-term honors thesis must present a topic proposal and obtain approval from an Art History thesis advisor by spring term registration of the junior year. Because thesis requirements

vary between departments, all interdepartmental majors must consult with both major departments before planning to write a senior honors thesis. A one-term thesis can count towards the upper level course requirements.

Requirements for Honors in Art History:

To qualify for departmental honors, a student must fulfill the following requirements: (1) cumulative grade point average of 3.3; (2) a grade point average of 3.3 in the Art History concentration; (3) successful completion of a two-term senior thesis ("A" or "A-minus"); (4) approval by a second faculty reader; (5) an oral presentation at The Steinmetz Symposium in the spring term of senior year; and (6) a copy of the thesis must be left with the department's collection and college archives. Having fulfilled the above, the student must then be nominated by the department for honors. Further guidelines for the senior thesis and departmental honors are available from the Art History faculty.

Course Selection Guidelines

Placement: Incoming first-year students who score a 4 or 5 on the AP exam in Art History may receive credit for one of the 100 or 200 numbered introductory Art History courses. Students who plan to major or minor in Art History are nonetheless encouraged to take the introductory courses as a way of deepening their backgrounds.

100-numbered courses: These courses are introductions to the study of Art History. They cover specific geographical and broad historical periods. Many are cross-listed or approved for credit in other disciplines or interdisciplinary programs. These courses are suitable for first-year students, sophomores, juniors, and seniors, and many of them carry General Education LCC credit. They also may serve as the prerequisites for many 300 and 400 numbered courses.

200-numbered courses: These courses are introductions to subfields within Art History. They may be medium-specific or thematic, and will facilitate learning across cultures. They are designed to be introductory and do not carry prerequisites. Many are cross-listed or approved for credit in other disciplines or interdisciplinary programs. These courses are suitable for first-year students, sophomores, juniors, and seniors, and many of them carry General Education credit.

300-numbered courses: These courses concentrate on specific historical periods, geographic regions, or themes. They generally have prerequisites drawn from the 100 or 200 numbered Art History courses. These courses are generally suitable for sophomores, juniors, and seniors. Some 300 numbered courses may require prerequisites.

400-numbered courses: This will be a rotating seminar taught by different faculty or with a different topic on occasion. It is designed for majors in their junior and senior years, and will involve advanced work in a specific topic or theme.

Internships, Independent Studies, and Thesis: These courses are generally reserved for advanced Art History students, who must consult with the Art History program and arrange for academic sponsorship prior to registering for them.

Visual Arts (Art History/Studio Arts Dual Concentration), B.A.

Requirements for the Art History/Studio Arts Dual Concentration:

Students who wish to major in a combined dual concentration of studio art and art history must take seven courses in each area.

In Studio: Students take one course in three of the disciplines of the studio arts offered by the department (drawing and painting; photography; printmaking; sculpture and three-dimensional design; digital arts). Students may not exceed four introductory courses. Two 200-level intermediate-numbered courses are required in at least two studio art disciplines. Two advanced courses are required in a single discipline (300 or above). For honors requirements, see below.

In Art History: Students take four 100 or 200 numbered courses which must include three of the four cultural areas: The Americas, Asia, Europe, Middle East/Central Asia; three courses from the 300 and 400 numbered courses. The WS requirement for combined dual concentration may be fulfilled by an Art History seminar taken in the senior year or a combined senior project. For honors requirements see below.

Requirements for Honors in the Art History/Studio Combined Dual Concentration:

Honors for the combined concentration requires (1) a cumulative grade point average of 3.3; (2) a 3.3 grade point average for all courses counting toward the combined concentration; (3) one of three project options: option A) Successful completion of a two-term art history honors thesis ("A" or "A minus"), which also requires successful completion of a paper by the end of the junior year ("B plus" or above), a proposal approved by the advisor, approval of the final product by a second faculty reader, and an oral presentation at The Steinmetz Symposium in the spring term of the senior year; or option B) A two-term independent study project focusing on the student's particular area of interest in the studio arts, culminating in participation in the spring senior exhibition ("A" or "A minus"); or option C) a two-term project that combines Art History and Studio Arts, which must be planned in consultation with an advisor from each discipline, and which must be proposed by the end of the junior year. For those doing a written work, a copy must be left with the department's collection and archives. For those completing a studio project, documentation of the project, a one-page abstract, and one original work must be left with the department. These requirements for project option C will be negotiated with the advisors on a case-by-case basis. All students must complete the WS requirement or an equivalent during the senior year.

Course Selection Guidelines

Placement: Incoming first-year students with strong Studio background from high school who are interested in the Visual Arts-Studio Fine Arts courses should contact the department chair to arrange for a portfolio review placement beyond an introductory course should contact the department chair to arrange for a portfolio review. Under certain circumstances, students may place into courses beyond the 100-level.

100-level courses: These courses are introductions to the study of Studio Fine Arts, and cover specific disciplines. Some are cross-listed or approved for credit in other departments or interdisciplinary programs. These courses are suitable for first-year students, sophomores, juniors, and seniors. Many are pre-approval courses, and serve as the prerequisites for 200-level courses.

200-numbered courses: These courses are intermediate courses in a specific Studio discipline in Studio Fine Arts. They may be medium-specific or thematic. Most require prerequisites or permission of the instructor, and they may be cross-listed or approved for credit in other disciplines or interdisciplinary programs. These courses are suitable for first-year students, sophomores, juniors, and seniors.

300-numbered courses: These courses concentrate on specific disciplines at an advanced level. They typically have prerequisites drawn from the 100- and 200-level Studio Fine Arts courses or require permission of the instructor. These courses are generally suitable for sophomores, juniors, and seniors.

400-numbered courses: These courses are for Visual Arts majors in their junior and senior years. They involve advanced work in one or more media on a specific topic, theme, and body of work.

Internships, Independent Studies, and Thesis: These courses are generally reserved for advanced Visual Arts students, who must consult with the Studio faculty and arrange for academic sponsorship prior to registering for them.

Visual Arts (Studio Fine Arts Concentration ID), B.A.

Requirements for the Interdepartmental Major:

Eight courses with at least one course in three of the five general disciplines of studio visual arts (Drawing/Painting; Photography; Printmaking; Sculpture/Three-dimensional design; Digital Art). No more than three 100-level introductory courses; no more than two 200-level intermediate courses; at least two advanced level courses (AVA-300 or above); at least one Art History course; the senior/honors sequence is optional.

A studio art interdepartmental major with a Digital Art focus requires four digital art courses, three studio courses in at least two of the four studio disciplines, and one art history course. Those interested should consult the department chairs of Visual Arts or Computer Science for specific details.

Requirements for Honors in Studio Fine Arts ID:

To qualify for departmental honors, a student must fulfill the following requirements: (1) cumulative grade point average of 3.3; (2) a grade point average of 3.3 in the Art History concentration; (3) approval by both departments of the ID thesis, according to departmental guidelines and consultation with advisors from both departments; (4) successful completion of a two-term senior honors thesis ("A" or "A-minus"); (5) installation of the body of work from the thesis in the spring exhibition during senior year; and (6) documentation of the thesis must be left with the department's collection and the College archives. Having fulfilled the above, the student must then be nominated by the department for honors. Further guidelines for the senior thesis and departmental honors are available from the Art History faculty.

Visual Arts (Studio Fine Arts Concentration), B.A.

Requirements for the Major:

Students take at least twelve courses in the department, with four required for the core that must be one course from each of the 100 numbered courses in the following four areas: Drawing, Sculpture or Three-Dimensional Design, Photography, and Printmaking. Students also take two intermediate courses with 200 or 300 numbered courses, two advanced courses numbered 300 or 400, and two Art History courses. Students take two additional Studio courses chosen in consultation with a Visual Arts faculty advisor (most often the senior honors thesis sequence, or an independent study and a 1-term senior project that fulfills the WS requirement).

Senior Show Requirements

Most majors will do either a two-term senior honors project (AVA 498 - AVA 499) leading to a solo exhibition in the spring term, or a one-term independent senior studio project (with an optional exhibition). These comprise in-depth study in a studio discipline in the senior year. A senior honors project takes the form of a two-term independent study focusing on the student's particular area of interest in the visual arts during consecutive terms (first term, 498, pass/fail; second term, 499, with an overall grade for both terms).

Requirements for Honors in Studio Fine Arts:

To qualify for departmental honors, a student must fulfill the following requirements: (1) cumulative grade point average of 3.3; (2) a grade point average of 3.3 in the Art History concentration; (3) successful completion of a two-term senior thesis ("A" or "A-minus"); (4) installation of the body of work from the thesis in the spring exhibition during senior year; and (5) documentation of the thesis must be left with the department's collection and college archives. Having fulfilled the above, the student must then be nominated by the department for honors. Further guidelines for the senior thesis and departmental honors are available from the Art History faculty.

Course Selection Guidelines

Placement: Incoming first-year students with strong Studio background from high school who are interested in the Visual Arts-Studio Fine Arts courses should contact the department chair to arrange for a portfolio review placement beyond an introductory course should contact the department chair to arrange for a portfolio review. Under certain circumstances, students may place into courses beyond the 100-level.

100-level courses: These courses are introductions to the study of Studio Fine Arts, and cover specific disciplines. Some are cross-listed or approved for credit in other departments or interdisciplinary programs. These courses are suitable for first-year students, sophomores, juniors, and seniors. Many are pre-approval courses, and serve as the prerequisites for 200-level courses.

200-numbered courses: These courses are intermediate courses in a specific Studio discipline in Studio Fine Arts. They may be medium-specific or thematic. Most require prerequisites or permission of the instructor, and they may be cross-listed or approved for credit in other disciplines or interdisciplinary programs. These courses are suitable for first-year students, sophomores, juniors, and seniors.

300-numbered courses: These courses concentrate on specific disciplines at an advanced level. They typically have prerequisites drawn from the 100- and 200-level Studio Fine Arts courses or require permission of the instructor. These courses are generally suitable for sophomores, juniors, and seniors.

400-numbered courses: These courses are for Visual Arts majors in their junior and senior years. They involve advanced work in one or more media on a specific topic, theme, and body of work.

Internships, Independent Studies, and Thesis: These courses are generally reserved for advanced Visual Arts students, who must consult with the Studio faculty and arrange for academic sponsorship prior to registering for them.

Architecture Track:

The Visual Arts department can advise students who are interested in architecture as well as related fields of historic preservation, landscape architecture, and urban planning. While graduate schools in these areas don't require a specific major, a thorough and strong Studio Art portfolio is essential and greatly enhanced by specific course work in engineering, art history, math, and science. Students interested should consult any of the Studio faculty or the department chair as early as possible for specific details.

Design Track:

The Visual Arts Department can advise students interested in Graphic, Industrial, and Digital Fabrication Design with a series of recommended courses. While graduate schools in these areas don't require a specific major, a thorough and strong Studio Art portfolio is essential and greatly enhanced by specific coursework in our department in conjunction with other relevant departments. Those interested should consult any of the Studio faculty as early as possible for specific details.

Visual Arts - Art History Minor

Requirements for the Minor:

Students take seven courses, including at least four 100 or 200 numbered courses which must include three of the four cultural areas: The Americas, Asia, Europe, Middle East/Central Asia, and two 300 or 400 numbered courses. Art History minors also take at least one Studio Art course.

Visual Arts - Studio Fine Arts Minor

Requirements for the Minor:

Students take seven courses, including three introductory 100 numbered courses, two intermediate courses numbered 200 or 300, and one advanced course numbered 300 or 400 (independent studies). Studio minors also take at least one Art History course.

Mission Statement and General Information

Union College Mission Statement

Union College provides a rigorous, holistic and immersive residential liberal education that emphasizes **integration, innovation, inclusion and reflection** for every student.

General Information

Union's Faculty: The student-faculty ratio at Union is 10:1. Ninety-six percent of the full-time teaching faculty holds the doctorate or terminal degree (excluding library staff, some of whom hold faculty rank).

Union's Students: More than 6,000 apply for placement in the first-year class. Exact statistics vary from year to year, but approximately 63 percent of the applicants are in the top decile of their secondary school class. Approximately 78% of the College's students are from the Northeast region; 40 states and territories and 36 other countries also are represented. More than half receive financial aid from the College. On average approximately 86 percent of each class completes the degree requirements within six years.

Enrollment: Union College enrolls approximately 2,100 full-time undergraduates.

Accreditation: Union College is accredited by the Middle States Commission on Higher Education, 3624 Market St., Philadelphia, PA 19104, (267) 284-5000. The College was last reaffirmed on November 19, 2015. The Middle States Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation. The programs in chemistry are certified by the American Chemical Society. The bioengineering, computer engineering, electrical engineering, and mechanical engineering programs are accredited by the Engineering Accreditation Commission of ABET.

The Board of Trustees: The governing body of the College is the Board of Trustees. The Board of Trustees holds title to the property, is responsible for the administration of the College and its funds, and determines the policies under which programs are offered. The chief executive officer is the president, who also serves as chancellor of Union University, comprising Union College, Albany Medical College (1839), Albany Law School (1851), Dudley Observatory (1852), and Albany College of Pharmacy (1881). Each institution has its own governing board and is responsible for its own programs. The Board of Governors of the University serves both to advise and to expand the areas of voluntary cooperation.

Alumni: The College's 27,000 alumni are represented by the Alumni Council, which is incorporated under the laws of the State of New York. The council has at least two representatives from each class, possibly more depending on the size of the class. It helps operate the alumni program through a group of standing committees and an executive committee, in conjunction with the Alumni Office. Alumni are welcome on campus every day of the year, with special emphasis on Homecoming and Family Weekend in the fall and ReUnion Weekend in late spring. ReUnions are held officially every five years, although all alumni are invited back to campus every year. Alumni clubs are organized

wherever local alumni wish to use such an organization as a center of their college activity. The College's quarterly magazine, *Union College*, is sent to all alumni and to parents of undergraduates.

About Union College

A Brief History

Union College traces its beginnings to 1779. Several hundred residents of northern New York, certain that Burgoyne's defeat at Saratoga two years before would mean a new nation, began the first popular demand for higher education in America. These residents pursued that dream for 16 years until, in 1795, Union became the first college chartered by the Regents of the State of New York. The first trustees consciously attempted to bring their new college into the mainstream of their world. The very name, Union, carried echoes of the new national union. More immediately and directly, it recognized the fact that the College was an outgrowth of a new sense of community among the several religious and national groups in the local population. Union's founders were determined to avoid the narrow sectarianism characteristic of earlier American colleges; today, Union is one of the oldest nondenominational colleges in the country.

Union did not share the heavily classical bias of most colleges of the day. Its motto ("*Sous les lois de Minerve nous devenons tous freres et soeurs*," or "We all become brothers and sisters under the laws of Minerva") is significantly of French rather than Latin origin. Union was among the first to introduce French on an equal level with Greek and Latin. In the 1820s, when the classical curriculum was the most widely accepted field of study, Union introduced a bachelor's degree with greater emphasis on history, science, modern languages, and mathematics. This liberality of educational vision characterized Union during the early years of the term of Eliphalet Nott, president from 1804 to 1866. Science and technology became important concerns; chemistry was taught before 1809, a degree in scientific studies was added, and in 1845 Union became the first liberal arts college to offer engineering. The College was one of the first to offer work in American history and constitutional government and did pioneer work in the elective system of study.

By about 1830, Union was graduating as many students as any other college in America. Students came from the South and West as well as the East. Among them were the father of Franklin D. Roosevelt, the grandfather of Winston Churchill, a president of the United States (Chester A. Arthur, Class of 1848), seven cabinet secretaries, 15 United States senators, 91 members of the House of Representatives, 13 governors, 50 important diplomats, more than 200 judges, 40 missionaries, 16 generals, and 90 college presidents, including the first presidents of the University of Illinois, the University of Iowa, the University of Michigan, Vassar College, Smith College, and Elmira College.

Nott's ingenious schemes for financing higher education, including a statewide lottery, also were instrumental in building Union's reputation. Innovations under the leadership of Andrew Van Vranken Raymond, president from 1894 to 1907 include the establishment of a Department of Electrical Engineering and Applied Physics, headed by the "electrical wizard" of the General Electric Company, Charles P. Steinmetz. The new department gave impetus to the development of strong programs in science and technology and attracted attention and applications to the College.

The 20th century brought other changes to Union. In 1970, the College adopted co-education and welcomed the first class of two dozen women transfer students. Today, roughly half of Union's students are women. More recently, the College has added programs in Asian Studies, Biomedical Engineering, Film Studies, Nanotechnology, and Neuroscience.

In 2004, the Minervas were inaugurated to broaden the educational experience for students, faculty and staff. Every incoming student is assigned to one of seven Minerva Houses, joining upper-class students, faculty and staff in a house affiliation. Each Minerva, with its own budget and governing council, is a center for intellectual and social activity. Union's fraternities and sororities continue a proud tradition of service. Theme Houses are a popular option for students who seek residential affiliation with others who are committed to themes such as community service, environmental awareness, art, music and language.

The College has done important experimental work in interdepartmental studies, which is reflected in a number of programs that cut across the lines of academic disciplines. Organized interdepartmental majors are offered in numerous areas, and the College has also developed programs that enable students to work toward both a bachelor's degree and an advanced degree. The Common Curriculum (General Education) has received national recognition, and the College has an innovative program of Writing Across the Curriculum. Efforts to renew and enhance the College's academic programs and curricula continue to be supported by major foundations.

Presidents of Union College

John Blair Smith	December 9, 1795 - May 1799
Jonathan Edwards Jr.	July 1799 - August 1, 1801
Jonathan Maxcy	September 1802 - July 1804
Eliphalet Nott	August 1804 - January 29, 1866
Laurens Perseus Hickok	March 1, 1866 - June 30, 1868
Charles Augustus Aiken	October 12, 1869 - June 1871
Eliphalet Nott Potter, Class of 1861	Summer of 1871 - July 31, 1884
Harrison Edwin Webster, Class of 1868	Mid-1888 - January 1894
Andrew Van Vranken Raymond, Class of 1875	May 5, 1894 - mid-1907
Charles Alexander Richmond	April 1, 1909 - January 20, 1928
Frank Parker Day	January 20, 1929 - August 10, 1933
Dixon Ryan Fox	July 1, 1934 - January 30, 1945
Carter Davidson	March 1, 1946 - January 31, 1965
Harold Clark Martin	July 1, 1965 - June 30, 1974
Thomas Neville Bonner	July 1, 1974 - August 31, 1978
John Selwyn Morris	August 1, 1979 - August 31, 1990
Roger Harold Hull	September 1, 1990 - June 30, 2005
Stephen Charles Ainlay	July, 1 2006 - June 30, 2018
David Robert Harris	July 1, 2018 -

The College Grounds

The Union College campus, officially known as the College Grounds, occupies 100 acres in Schenectady, a city of 60,000 founded by the Dutch in 1661. The Grounds are the College's third home. In 1813, shortly after the College decided to move to the new location, the French architect and landscape planner Joseph Ramée laid out the new campus - the first unified campus plan in America. He designed a great central courtyard, flanked on three sides by buildings and open to the west, with a round pantheon as the focus of the courtyard.

The distinctive Ramée style, with its arches and pilasters in white, remains the dominant motif in Union College architecture. Recent additions have included the Feigenbaum Center for Visual Arts, Henle Dance Pavilion and the Wicker Wellness Center.

Alumni Gymnasium, the Murray and Ruth Reamer Campus Center, and Schaffer Library have received major renovations and expansion, the historic Nott Memorial has been restored to become a display and discussion center, and a $25 million project revitalized the neighborhood to the immediate west of campus by creating apartment-style housing for 160 students, a community center, and a residence hall for 230 students. Other facilities include the Viniar Athletic Center, home of women's and men's basketball; the Taylor Music Center, a state-of-the art classroom, rehearsal and performance facility; Breazzano Fitness Center in Alumni Gymnasium; the new Center for Bioengineering and Computational Biology; and the opening of seven Minerva Houses: Beuth House, Breazzano House, Golub House, Green House, Messa House, Sorum House and Wold House.

North of the central campus lie the eight acres of formal gardens and woodland known as Jackson's Garden, begun in the 1830s by Captain Isaac Jackson of the Mathematics Department. Through the garden runs Hans Groot's Kill, the brook that bounds through Union's Grounds in the College song. A durable local legend, never confirmed by historians, holds that the villagers of Schenectady burned a local maiden at the stake there in 1672, and that the ghost of the dead girl has haunted Jackson's Garden ever since.

At the center of the Grounds, on the spot designated by Ramée for his pantheon, stands Union's most unusual building, the distinctive, 16-sided Nott Memorial. Begun in the 1850s and completed in 1875, it has been hailed by architectural historians as an important example of American Victorian architecture and is a National Historic Landmark. Facing the Nott Memorial is Memorial Chapel, built in 1925 as a monument to the Union College graduates who lost their lives in World War I. Along its walls hang portraits of the former presidents of the College. Memorial Chapel is home to the renowned Union College Concert Series, which presents the world's finest chamber musicians. It also serves as the venue for major College convocations.

Also near the center of campus is Schaffer Library, which not only houses an extensive collection but also provides comfortable and modern space for reading, research and collaborative study. The library staff offers support for research and teaching in a variety of ways including in-class presentations, individual consultations, online research guides and informal inquires at the reference desk. The Schaffer Library provides access to electronic books, journals and databases, while on campus or off, 24 hours a day. Special Collections and Archives holds several of the College's most prized possessions, including an elephant folio edition of Audubon's Birds of America, which the College purchased directly from the artist; the Trianon editions of William Blake's works; the first books bought for the library in 1796; and the original College charter. The Library also houses the Union College Permanent Collection of fine art and scientific instruments. The collection includes over 2,800 works of art and material culture, including significant resources from internationally recognized artists and objects from Eastern and Ancient cultures. The collection also includes the original Ramée drawings for the campus and the Olivier Models. The Artist Installation Series is in the Learning Commons and Union's fine art collection is on display throughout the library. There is always an interesting exhibition of the College's treasures on display in the Lally Reading Room and the Beuth Atrium.

Flanking the library and connected to it by a curved colonnade are Karp Hall and Lippman Hall. Karp Hall is the home for the Departments of English and Modern Languages. Lippman Hall, named in honor of Robert Lippman '50 through a gift by his son, Jim '79, houses Economics, History, Political Science and Sociology. On nearby South Lane, Lamont House is the home of Anthropology, Classics, Philosophy and Religious Studies programs.

Filling the area in front of the library and between the two classroom buildings is Roger Hull Plaza (named for the former Union president), an open space with benches and flower beds. This campus crossroads was furnished and

landscaped in part with gifts from parents of Union College students. It serves as the site for such formal ceremonies as Commencement and for informal meetings and conversation.

The Science and Engineering complex, which includes the Science and Engineering Building, Bailey Hall, Steinmetz Hall and Butterfield Hall, is the home of the Departments of Biological Sciences, Chemistry, Computer Science, Electrical and Computer Engineering, Mathematics, Mechanical Engineering, Physics and Psychology. Mathematics and Psychology are in Bailey Hall, Computer Science in Steinmetz Hall, and Bioengineering and Neuroscience in Butterfield Hall. In this complex, and available for student use, are such research tools as a nuclear magnetic resonance spectrometer, a Pelletron accelerator, X-ray diffraction equipment, a centrifuge, and a scanning electron microscope capable of examining a surface area 200,000 times smaller than what can be seen with a conventional light microscope.

The new Integrated Science and Engineering Complex promotes connections across disciplines. The centerpiece building, a 142,000-square-foot facility will house primarily the departments of Biology; Chemistry; Electrical, Computer and Biomedical Engineering; Mechanical Engineering and Physics and Astronomy

The nearby F.W. Olin Center's interactive computerization capabilities make the building adaptable for use by nearly every academic department and student. The Geosciences Department is located here, and, in addition to a variety of collaborative computer classrooms and laboratories, the center has a multi-media auditorium and a 20-inch, remote-controlled telescope.

The Peter Irving Wold Center for Science and Engineering was made possible by a gift from John Wold '38. The interdisciplinary Center serves as a platform for learning, research and innovation which solidifies the College's role as a national leader in the integration of science, engineering and the liberal arts. The three-story 35,000-square-foot research and education facility houses space for interdisciplinary programs such as Biochemistry, Environmental Science and Engineering, a high performance computer lab, state-of-the-art laboratories and classrooms, and flexible incubator labs for leading edge interdisciplinary research. Recent additions to Wold include labs for robotics and 3-D printing.

The Feigenbaum Center for Visual Arts is in North Colonnade in the former Philosophical Hall, which held the first analytical chemistry laboratory specifically opened for college students, and is home to the Department of Visual Arts. Also in the North Colonnade, is the Taylor Music Center which includes the Fred L. Emerson Auditorium, a performance and teaching space with state-of- the-art recording technology. Surrounding the performance hall are practice rooms, high-tech classrooms and faculty offices. The Yulman Theater and Henle Dance Pavilion, overlooking Jackson's Garden, complete the performing arts facilities.

The focal point of the Murray and Ruth Reamer Campus Center is a commons area, part of a multi-level atrium that extends to a patio overlooking Jackson's Garden. The building also houses an auditorium, a dining hall, food court, a two-level bookstore, and a variety of office and activity rooms for student organizations such as Concordiensis, the student newspaper; WRUC, the first radio station to offer regularly scheduled broadcasts; The Garnet, the yearbook; the literary magazine, Idol; and the student activities office.

Alumni Gymnasium houses Breazzano Fitness Center, made possible by a gift from David Breazzano '78, a spacious facility with an extensive assortment of equipment for cardio fitness and weight training. The building also has an eight-lane swimming pool with seating and a diving area; racquetball/squash courts; and multi-use rooms for dance, aerobics and yoga programs.

Achilles Center houses Messa Rink, the renovation of which was made possible by a gift from Frank Messa '73, as well as athletic training and strength and conditioning programs.

Old Chapel, the former chapel and student meeting hall, is still used for many meetings.

South College, built in 1814, contains Sorum House and Green House, two of the College's Minerva Houses. North College, its counterpart on the other side of Library Field, is the home of Messa House and Wold House. Beuth House, Breazzano House and Golub House complete the Minerva House system.

Other residence halls are Davidson and Fox Houses, West College, Richmond House, Raymond House, Potter House, College Park Hall, Garnet Commons and apartments along Seward Place to the west of campus.

Further Information

Academic Matters
Dean of Faculty, Feigenbaum Hall
(518) 388-6102

Academic Records
Registrar, Silliman Hall
(518) 388-6109

Admission to Union College
Office of Admissions, Grant Hall
(518) 388-6112 or (888) 843-6688

Alumni Affairs and Records
Alumni Office, Abbe Hall
(518) 388-6149

Business Matters
Finance Office, McKean House
(518) 388-6104

Student Aid and Scholarships
Financial Aid Office, Grant Hall
(518) 388-6123

Student Affairs
Dean of Students, Reamer Campus Center
(518) 388-6116

Student Loans
Finance Office, McKean House
(518) 388-6104

Public Information/Publications
Office of Communications, 69 Union Avenue
(518) 388-6131

Address:
Union College
807 Union St.
Schenectady, N.Y. 12308
(518) 388-6000

www.union.edu

U.S. Department of Education

Prizes, Honors, and Fellowships

Endowed and Annual Prizes

William F. Allen (1895) Essay Prize. To a senior in any department for the best essay.

Ronald K. Amiraian (1980) Memorial Prize. To a student of modern languages who has performed with distinction on a Union Term Abroad.

Andrew W. Archibald (1872) Prize. To the senior earning a Bachelor of Arts degree with the highest scholastic standing.

Frank Bailey (1885) Prize. To the senior who has rendered the greatest service to the College in any field.

Arnold I. Bittleman Memorial Prize. To a student who has studied drawing in the Visual Arts department and whose work, in the judgment of the Visual Arts faculty in collaboration with an outside juror, is outstanding.

Fletcher (1947) and Grace Blanchard Memorial Prize in Bioengineering. To a senior who has excelled in Bioengineering.

William H. Bloom, M.D. (1945) and Jonathan R. Bloom (1988) Poetry Prize. For the best poems or series of poems by an undergraduate.

David Brind (1982) Memorial Prize in English. To one or more outstanding senior students in English.

Stephen P. Brown Memorial Trophy. To the fraternity that has the best record in scholarship, intramural athletics, and extracurricular activities.

George H. Catlin (1867) Prize. To the graduating senior in liberal arts with the highest scholastic record and deemed most promising for graduate study and for eventual service in the field of college teaching.

Alan Lake Chidsey (1925) Citizenship Award. To a senior for distinctive contribution to the advancement of responsible government in student affairs.

Class of 2001 Prize. To a junior, selected on the basis of academic, personal and social achievement and on his or her contributions to Union in all of these areas.

Hilda A. Colish Annual Prize in Sculpture. To a non-arts major for their achievement in sculpture.

Josephine Daggett Prize. To a senior of the best conduct and character.

Division of Analytical Chemistry of the American Chemical Society Award. To a student who has excelled in analytical chemistry.

Joseph D. Doty Prize. To the junior or senior who, in the judgment of the Department of History, has done work of outstanding merit.

Kerrie Droban (1987) Annual Award for Writing Excellence. Created from the gifts of Kerrie Ticknor-Droban, Class of 1987. Awarded to a student who has demonstrated excellence in writing.

Samuel S. Feuer (1925) Prize. To the senior in the premedical course whose primary interest is in dentistry and who has maintained the highest scholastic average over four years.

Sarah A. Foster (2014) Memorial Prize. Established through the gifts of Nicholas J. D'Angelo, Class of 2014, for a senior who demonstrates academic excellence, with first preference to a senior history major who plans to become a teacher, and second preference to any senior who plans to become a teacher.

Frankel Prize. For outstanding achievement in a religion course.

Robert M. Fuller (1863) Prizes. One to the sophomore, the other to the senior, who demonstrates outstanding work, ability, and promise in chemistry.

Bruce M. Garber (1971) Prize. To the premedical or predental student who best exemplifies the qualities of personal integrity and humane concern for the future practice of medicine or dentistry.

General Electric Edison Mechanical Engineering Book Prize. (Previously named "Berkley Davis Mechanical Engineering Book Prize"). To a sophomore majoring in Mechanical Engineering who has demonstrated exceptional leadership qualities.

General Electric Edison Mechanical Engineering Leadership Prize. (Previously named "Berkley Davis Mechanical Engineering Leadership Prize"). To a senior majoring in Mechanical Engineering who has demonstrated exceptional leadership qualities.

General Electric Energy Steinmetz Prize. To a senior in Mechanical Engineering who completes the best senior project.

Geology Faculty Prize. To a senior who contributes most to the Geology Department and social morale.

Lisa S. Gerhan (1994) Memorial Endowed Prize. For academic excellence, a commitment to the field of psychology, and the potential for future contributions to the field.

Ashraf M. Ghaly Geo Research Prize. Given to the senior who completes the best research study and reports original results in any geo field (geotechnical, geoenvironmental, geoengineering, geoscience, or geospatial). Recipient is selected by a committee of engineering faculty in consultation with geo faculty. Created by Ashraf M. Ghaly in gratitude to the students who nominated him for the Stillman Prize for Excellence in Teaching, and to commemorate his winning of that prize in 1997.

Celia Glaubach Prize. To the student who has demonstrated outstanding scholarship in the area of Religious Studies.

John R. Glover (1976) Prize in Black-and-White Photography. To a student who demonstrates excellence in black-and-white photography.

John R. Glover (1976) Prize in Color Photography. To a student who demonstrates excellence in color photography.

Goodnow Neuroscience Endowed Prize. To the graduating Neuroscience student who shows the most promise for success in graduate school and beyond.

Harry Guttman Endowed Prize. To an outstanding student of Classics.

John S. Hadala (1928) Endowed Book Prize. To a senior majoring in Mechanical Engineering on the basis of academic, personal, and social achievement

Hans Hainebach Memorial Prize in German Literature. To a sophomore or junior who has demonstrated particular promise as a student of German literature.

Hans Hainebach Memorial Prize in Judaica. To a student who has offered the best performance in the field of Judaica.

Hedda Hainebach Memorial Prize in Music and Theater. Alternating annually between music and theater, to the best performer of classical music as a soloist, with accompanist or with a group; or to a student who has written the best short play or to the best actor or actress.

Edward Everett Hale, Jr. Prize. For the best essay written by a sophomore or junior.

Joel A. Halpern (1961) Prize. To a student or students who have reached out beyond the campus to make a commitment in service to the community

Oswald Heck (1924)-Irwin Steingut Prize. To the student who has consistently done the best work in Political Science.

Eugene W. Hellmich (1923) Memorial Prize. To seniors who demonstrate excellence in mathematics and are planning to teach math.

Victor Herbert Prize. To the student who shows the most promise of making a contribution to American music.

Albert Hill Recognition Award. To a senior who has held a leadership position and has demonstrated exceptional commitment to enhancing the college community.

Kurt W. Hillig (1975) Biochemistry Prize. To a senior who demonstrates outstanding work, ability, and promise in biochemistry.

Julian B. Hoffman, M.D. Memorial Award. To the student (preferably premedical) for distinguished interest, devotion, and contribution to the arts and/or intellectual climate at Union College.

Hollander Convocation Music Prize. To a musician or ensemble for musical performance.

Roger H. Hull Community Service Award. To a senior who has rendered the greatest sustained service to the greater Schenectady Community and who has initiated or is actively engaged in an ongoing community service project.

Charles B. Hurd Prize. To a student of physical chemistry.

Albert C. Ingham (1847) Prize. To the student in the Social Sciences judged to have done the most outstanding piece of scholarly work.

Ingvar V. Ingvarsson Prize. To a senior in electrical engineering chosen for high scholarship.

John Iwanik Prize. To an outstanding Russian language student.

William B. Jaffe (1926) Art Award. For exceptional achievement by an art major, marked by excellence in the study of art history, independent scholarship, and interest in the work of the department.

William B. Jaffe (1926) Athletic Award. To the member of the graduating class to be the outstanding athlete of the year, taking into account the character and motivation of the individual in addition to athletic excellence.

Thomas J. Judson (1966) Memorial Book Prize. To a sophomore who has shown academic excellence as well as sincere interest in the study of modern languages.

David S. Kaplan (1982) Prize. To a student applying to participate in a term abroad. Preference to students majoring in political science.

Warner King (1906) Prize. To the senior in engineering who has contributed most to the traditions and ideals of the College.

Ethel Kirchenbaum Memorial Prize. To the senior who, in the opinion of the Engineering Departments, shall be deemed to possess the best potential for furthering the ideals of the engineering profession.

Harold A. Larrabee Prize. To the student who has done the best work in philosophy during the year.

William E. Lasnik (1968) Prize. To a junior or senior premedical student on the basis of scholarship and character.

Anthony C. LaVecchia (1998) Memorial Award. To a student who demonstrates a keen interest and passion in journalism, especially with a focus in political journalism.

Stephen F. Leo, M.D. (1884) Prize. To the premedical student on scholarship who attained the highest grades in the graduating class and who has been accepted in medical school.

Alice P. and Donald C. Loughry (1952) Prizes. To students completing the best senior projects in computer science, computer engineering, and electrical engineering.

Edith Emilee MacCoy Prize. To the student who excels in botany.

John Lewis March Prize. To a senior who has shown increased interest and ability in psychology during the final two years of college.

Minerva Prize. Awarded to the student whose work best combines the scholarly study of women or gender with activities that enhance the life of women on campus.

Lewis Henry Morgan (1840) Prize. To the anthropology major who produces the best senior thesis.

R. E. Morgan Memorial Award. To a senior in computer engineering chosen for high scholarship.

Harold and Ellen Nagorsky Memorial Prize. Awarded to a premedical junior student who contributes the most to the Union College community through extracurricular activities.

Alvin F. Nitchman (1924) Prize. To the most promising senior who plans to attend law school.

Ronald M. Obenzinger (1961) Prize. To a premedical student who is selected for high academic merit and personal worthiness.

Robert G. O'Neale (1878) Prize. To a Bachelor of Arts candidate with the highest standing in Classics.

Hans Pasch Memorial Prize. Awarded for the best essay written about the Holocaust.

Elias Peissner Prize. To an economics major who has done work of outstanding merit.

William A. Pike Memorial (1960) Trophy. To a junior for attitude, ability, participation, and achievement in intercollegiate sports.

President's Commission on the Status of Women at Union College Prizes. To seniors who have contributed significantly to promoting equality between the sexes on campus in areas such as scholarship, college and community service, and athletics.

Daniel F. Pullman Prizes. To a senior of high scholastic standing in Humanities and Engineering.

Rennes Lecturer/Lectrice Prize. To a senior planning to serve as a lecturer or lectrice pursuant to Union College's teacher exchange program in Rennes, France.

Martin Terry Resch Prize. To the senior who shows the greatest promise for advanced study in pure or applied mathematics.

Mrs. Edwin L. Rich Prize. To a student majoring in English who has demonstrated outstanding scholarship.

Charles Alexander Richmond Prizes. One for excellence in the fine arts, the other for excellence in the appreciation of music.

Robert B. Ridings Award. To a senior female athlete for her attitude, ability, participation, and achievement in intercollegiate sports.

Paul Rieschick (1974) Prize. In appreciation of the time and effort he devoted to the basketball program and individual players.

Mark Rosenthal (1976) Memorial Prize. To a senior involved in community activities, in good academic standing and planning to attend medical school after graduation.

Rotary Foundation Endowed Prize for International Study. To the senior who shows the greatest promise and interest in an area of international relations. Preference to a student from Schenectady County.

Robert L. Royal (1938) Award. To a financially deserving student who has been accepted by Albany Medical College, to be applied to the purchase of instruments and equipment necessary to medical studies.

Mortimer F. Sayre Prize. To the senior with the best potential for furthering the ideals of the mechanical engineering profession.

Calvin G. Schmidt (1951) Prize. To the member of the junior class who has contributed most to the betterment of student life on campus.

J. Richard Shanebrook Prize. To a student of any religious tradition who has contributed the most to the betterment of religious life on campus.

Daniel Shocket (1972) Memorial Award. To a student majoring in English with a strong interest in creative writing.

Aime Simon (1991) Term Abroad Prize. To students of high academic standing and promise with strong interests in French studies, participating in a term abroad program in a French-speaking country.

Edward S.C. Smith Geology Prize. To a senior majoring in geology who demonstrates high professional potential.

Freling H. Smith (1865) Prize. To the History major with the best senior thesis.

Dr. Reuben Sorkin (1933) Award for Proficiency in Premedical Studies. To a senior demonstrating proficiency in undergraduate studies with an outstanding aptitude for continuing work leading to a degree in medicine.

Ralph W. Stearns (1907) Prize. To the outstanding student or students in electrical or computer engineering.

Milton Hymes Sternfeld (1916) Prize. For the best original essay in philosophy by a member of the senior class.

Roger Thayer Stone (1928) Prize. To the sociology major who produces the best senior thesis.

William W. Thomas Award in French and Francophone Studies. To a senior who has excelled in and contributed most to French and Francophone Studies on the basis of academic, personal and extracurricular achievement.

Joel D. Ticknor (1960) Annual Prize. To a senior graduating from the political science or philosophy departments (alternating yearly) who has demonstrated a capacity for long term thinking and who plans to use his/her career to help solve the world's most pressing problems.

Charles M. Tidmarch Memorial Prize. To a student who has written the best senior thesis in political science.

Professor Frank Titus Memorial Prize in Physics. To a senior who demonstrates outstanding work, ability and promise in physics and/or astronomy.

Frances Travis Award. To a student who is working his or her way through college and who has demonstrated unusual responsibility and self-reliance.

James Henry Turnbull (1929) Prize. To a sophomore student who excelled in physics.

UNITAS Diversity Leadership Award. To the student who has made a significant contribution toward fostering diversity on campus.

Wessel Ten Broeck Van Orden (1839) Prize. To a first-year student excelling in English composition.

Edward Villella, L.H.D. 1991 Prize. To the student for the best dance performance.

David Wagenseil (1978) Memorial Award. To a senior fraternity man for outstanding participation and leadership in intramural sports.

Horatio G. Warner (1826) Prize. To a student of high personal character who has the highest scholastic standing in the Bachelor of Arts program.

Mildred Wilder Prize. To the senior majoring in political science who has written the best piece of scholarly work pertaining to the subject of women and politics.

George H. Williams Prize. To a graduating senior for excellence in Computer Science.

Lee, William, Dr. Norman (1943) and Dr. George (1953) Wrubel Memorial Prize. (Previously named the Lee and William Wrubel Memorial Prize) To a senior preparing for dentistry or medicine, based upon both academic achievement and character.

Eugene I. Yudis (1955) Prize. To the student in any class who has produced the best piece of prose fiction.

Special Awards and Prizes

John Bigelow Medal (2008). Recognizes friends of the College who have contributed to the advancement of humanity.

Eliphalet Nott Medal. Established by President Roger H. Hull. Recognizes the perseverance of alumni who have attained great distinction in their fields. The medal is named for Eliphalet Nott, president of Union College from 1804 to 1866.

Founders Medal. Established by action of the Board of Trustees in 1968. Presented at irregular intervals in recognition of unusual and distinguished service to Union College in a particular area of institutional life.

Gideon Hawley Teacher Recognition Award. Nominated by first-year and sophomore Union College students, to a secondary school teacher who has made a difference in their lives.

John H. Jenkins Award. Awarded for the best bibliography or bibliographical work published during the year, or for a bibliographical research project of significance while in process of preparation. Determination of the recipient of the award shall be at the sole discretion of Union College or such agents as it shall engage.

Stillman Prize for Faculty Excellence in Research. To a faculty member to encourage outstanding research.

Stillman Prize for Faculty Excellence in Teaching. To a faculty member to encourage outstanding teaching.

UNITAS Community-Building Award. To the Union College student, administrator, staff or faculty member who best demonstrates leadership in bringing together as many segments as possible of the campus community for purposes such as community service, fundraising for a worthy cause or celebration of College history.

Fellowships

Alpha Phi Alpha Mohammad Omar (1994) Memorial Community Service Internship. Established by the brothers of Alpha Phi Alpha fraternity in memory of Mohammad A. Omar, a brother of the Pi Pi chapter who died in 1993

(degree awarded posthumously in 1994). The internship provides support to students volunteering for not-for-profit community organizations. Through it, and the example of Mohammad Omar, Alpha Phi Alpha strives to build awareness of and dedication to a lifetime of improving the quality of life for others, as well as promote the development of individuals to serve as strong examples of commitment to service.

Alexander David Askenazy (2020) Memorial Fellowship for Summer Research. Established by Wendy L. Hansen and Philip D. Askenazy in memory of their son, Alexander David Askenazy, Class of 2020. To support undergraduate summer research with first preference being research in the field of biochemistry, second preference being research in the field of chemistry, and third preference being research in the field of biology.

David J. Bigda Summer Internship. An annual internship established by Carolyn Bigda Dulchinos '84 from the gift of her late father, David J. Bigda, to provide summer internship opportunities for students interested in progressive political, social and/or environmental activism.

Arnold Bittleman Fund for Undergraduate Summer Research. Established by students and friends of the late Professor Arnold Bittleman. Awarded to students performing summer research in the field of Visual Arts.

Booth Ferris Research Fellowship. Established by the Booth Ferris Foundation to support the Summer Science Research Endowment Fund.

Peter R. Brayton (1972) Endowed Fund. Created from the gifts of Peter R. Brayton '72 to provide assistance to undergraduate students interested in pursuing summer research projects in the biological sciences.

Andrew M. Brooks (1978) and Cassandra N. Brooks Terms Abroad Fellowship. Created by Andrew M. Brooks (1978) and Cassandra N. Brooks. Awarded to students who require financial assistance to participate in Union College's Terms Abroad Program.

Class of 1963 Annual Internship. Established through the gifts of members of the Class of 1963 in honor of their Class, for students who require financial assistance to participate in internships.

Class of 1964 Mini-Term Endowed Fellowship. Created from the gifts of members of the Class of 1964, for a student requiring financial assistance to participate in a mini-term.

Class of 1971 Annual Internship. Established through the gifts of members of the Class of 1971 in honor of their Class, for students who require financial assistance to participate in internships.

Class of 1973 35th ReUnion Community Service Internship. Established by the Class of 1973 in honor of their 35th ReUnion. Awarded annually to Union College students interning in not-for-profit community service organizations.

Class of 1989 Endowed Terms Abroad Fellowship Fund. Established by Andrew Albert (1989) and Stephan Jaeger (1989) to provide financial assistance for students participating in Union College's Terms Abroad Program, with first preference to AOP/HEOP students with a minimum GPA of 3.5; second preference to students with a minimum GPA of 3.5; and third preference to any other appropriate undergraduate.

Class of 1991 Internship Fund. Established by the Class of 1991 in memory of classmates Christian Kadak, Wendy Kaplan, Roberta McCaffery and Andrew Rice, to support students who require financial assistance to participated in unpaid summer internships.

Chelsea Leigh Cobb (2008) Terms Abroad Fellowship. Created by Ty and Leigh Stevenson Cobb to honor their daughter Chelsea Leigh Cobb. Awarded to students who require financial assistance to participate in Union College's Terms Abroad Program.

Estelle Cooke-Sampson (1974) Making U Possible Study Away Fund. Established by Estelle Cooke-Sampson (1974) for students who require financial assistance to participate in mini- or full-term study away programs.

Lee L. Davenport (1937) Summer Research Fellowship. Established by Lee L. Davenport, Class of 1937, to students pursuing studies in engineering, chemistry, biology, physics, or geology.

Robert G. Englebach Endowed Fund for Asian Studies. Created from the gifts of Robert Englebach, to support the opportunity for students to travel to and study in Asia.

Dr. Gerald Ente (1951) Endowed Mini-Term Fund. Established by the Fraternal Order of Police Surgeons Lodge SAO3 in honor of Dr. Gerald Ente (1951), for students who require financial assistance to participate in a mini-term, with first preference to students majoring in the 'hard sciences' (chemistry, biology, physics, geology or similar).

Tracy Leigh Epstein-Pesikoff Terms Abroad Fellowship. Established by Michael J. Epstein, MD, Class of 1959, in honor of his daughter. Awarded annually to students participating in terms abroad.

Philip B. Evans (1965) Terms Abroad Fellowship. Established by Philip B. Evans, Class of 1965. Awarded to students who require assistance to participate in the terms abroad program for study in Asia.

Frank Gado Endowed Terms Abroad Fellowship. Created by Janet, Class of 1974, and Hans Black, MD, Class of 1974, to honor Frank Gado, professor emeritus of English, who retired in 1996 after more than 30 years of service. Awarded to a student who wants an international learning experience and cannot afford the full cost.

Gilbert Family Charitable Foundation Study Away Fellowship. Established by the Gilbert Family Charitable Foundation, represented by Elise L. and Daniel R. Gilbert (1991), to provide financial assistance for students participating in full term and mini-term study away programs.

Aaron J. Feingold, M.D. (1972) Undergraduate Research Fellowship for Medical Humanities. Established by Aaron J. Feingold, M.D. (1972) for students who wish to participate in summer research at Union College and are interested in exploring the relationship between humanities and social sciences as they intersect with healthcare and healing.

Paula Gmelch Fund for Undergraduate Summer Research. Created by George and Sharon Gmelch, faculty members in Union's Anthropology Department, in honor of their sister-in-law. Awarded to a student interested in performing summer research in the areas of anthropology or environmental studies.

Kelsey Hastings Golitz Memorial Fund for Cancer Research. Established by Rebecca Hastings and Dr. Michael Golitz in memory of their daughter, Kelsey Hastings Golitz, Class of 2010, to support summer research fellowships, senior thesis projects or other such academic undertakings related or contributing to understanding the causes of cancer or improving the diagnosis/treatment of cancer. In making awards, first preference shall be given to a student planning to pursue a career in medicine.

Roger H. Hull Community Service Internship. Created by the Trustees of Union College in honor of President Roger H. Hull's service to the College from 1990 to 2005. Awarded to a student interested in pursuing a career in community or non-profit service.

Roy C. Jackson (1982) Study Away Fellowship. Established by the John ad Rosemary Brown Family Foundation in honor of Roy C. Jackson, Class of 1982, to provide financial assistance for students participating in full term and mini-term study away programs.

Edward R. Kane (1940) Endowed Chemistry Fund.

David S. Kaplan Term in Washington. Created from the gifts of Congressional Quarterly, its employees, and friends and relatives of David S. Kaplan, with income awarded to a student participating in Union's annual term in Washington, D.C..

The Professor Frederick A. Klemm and Eleanor G. Klemm Fund for International Study and Service. Established by Frederick Klemm, professor emeritus of German, considered the "father of Terms Abroad" and his wife

Eleanor, to develop College programs that prepare students for international careers in government service, non-governmental organizations and the private sector.

Laudise Summer Research Fellowship in Chemistry. Created by Robert A. Laudise, Class of 1952, in memory of his father, Anthony T. Laudise.

Ruth Lewin Endowed Fund for Students on Terms Abroad. Created by Ruth Lewin, a good friend of Union College. To assist students who choose to extend their education by taking part in terms abroad.

Christopher Michael Mastrangelo (1989) Memorial Internship. Created by Clifford M. Mastrangelo (1963) in memory of his son Christopher Michael Mastrangelo (1989), for students who require financial assistance to participate in internships.

Kenneth N. Mathes (1935) Fund. Created by Kenneth N. Mathes, Class of 1935, for engineering students on terms abroad.

Francis C. McMath (1946) Summer Research Fellowship in Engineering. Established from the gifts of Francis C. McMath, Class of 1946, with income awarded annually to students entering senior year who wish to conduct research in the field of environmental engineering.

Mixer-Ainlay Fund for Experiential Opportunities. Established by David P. Mixer (1974) in honor or Union College President Stephen C. Ainlay. The fund will support students with financial need who otherwise would be unable to take advantage of academic opportunities offered by the College that are not covered by financial aid, such as mini-terms and off-campus terms (abroad or elsewhere in the United States).

Byron A. Nichols Endowed Fellowship for Faculty Development. Created from the gifts of Alan and Susan Maycock and friends of Prof. Byron Nichols, to help Union College faculty develop programs and skills that reflect the quality of intellectual, social and personal interactions that Byron fostered and developed with students during his career at Union.

Merck Summer Undergraduate Research Scholarship. Established by the Merck Co. Foundation to support summer research in chemistry.

NYNEX Foundation Endowment Fund. Established in 1988 with funds applied to the teaching interns component of the Student Aid for Educational Quality.

Robert Panoff (1942) Summer Research Fellowship. Established by Kathleen Panoff in memory of her husband, Robert, Class of 1942, and supported by gifts of Mrs. Panoff and others. Made to students of high academic standing in electrical engineering who participate in a summer research program under the guidance of the electrical engineering faculty.

David Potts Research Fellowship in History. Established through the gifts of Neil Kramer, Class of 1970, in honor of Union College Professor David Potts, to support student research in history.

Rampe Family Annual Internship. Established through the gifts of Kevin Rampe, Class of 1988, to support students who require financial assistance to participate in internships.

Harriet and Paul (1958) Rosen Endowed Summer Research Fellowship. An endowed fund created from the gifts of Dr. Paul R. Rosen and Harriet Rosen to provide financial assistance to students who apply and receive undergraduate summer research fellowships at Union College.

Henry S. Scherer, Sr. (1922) Endowed Internship. Established through the gifts of Henry and Nancy Klingeman in honor of Henry S. Scherer, Sr., Class of 1922 to provide financial assistance for student(s) participating in internships related to community service.

John (1981) and Michele (1984) Sciortino Cancer Research Fund. Established in 2005 by John Sciortino, Class of 1981, and Michele Sciortino, Class of 1984, in memory of Russell Sciortino, Frederick Hudson, Jr., Mark Hudson and all those whose lives have been affected by cancer illnesses. Awarded annually to a student to support a summer research fellowship, senior thesis project or such other academic undertaking that is related or might contribute to the understanding of the causes of cancer or improve the diagnosis or treatment of cancer illnesses.

Robert Avon Smith (1952) Summer Research Fellowship in Biomedical Engineering. Created by Robert Avon Smith, Class of 1952. Awarded to students in the sciences or engineering who participate in a summer research program in biomedical engineering under the guidance of College faculty.

Virginia Smith (1978) Summer Internship. Created from the gifts of Virginia Smith (1978) for students participating in summer internships, with preference to students from diverse backgrounds.

Dr. Alfred Sommer (1963) and Jill Sommer Health Science Endowment. Established through the gifts of Dr. Alfred Sommer, Class of 1963, and Jill Sommer, to encourage Union College undergraduates to experience the excitement and fulfillment of academic medicine and public health.

William Cady Stone Fellowship. Established by William Stone. Awarded to help provide a full-time student with one year of study abroad.

Surdna Summer Science Research Fellowships. Established by the Surdna Foundation. Awarded to students enrolled in the sciences.

Bill Thomas Endowed Study Abroad Fund. Established by the friends of Prof. William W. Thomas to support students with financial need who wish to go on full terms abroad. Preference given to declared Modern Languages majors and minors with emphasis on those programs that involve the study of a foreign language.

Richard C. Tilghman (1969) Term Abroad Fellowship. Established by Richard C. Tilghman, Class of 1969. Awarded to a student pursuing a major in the sciences, engineering, or mathematics.

J. and P. Fisher Viglielmo Terms Abroad Fellowship. Established from the gifts of James A. Fisher '81 and Pamela Viglielmo '82. Awarded annually to students who participate in the terms abroad program.

Kelly M. Williams (1986) Terms Abroad Fellowship. Established by Kelly M. Williams, Class of 1986 to support students who require assistance to participate in Union College's Terms Abroad Program.

Jody Lynn Yetzer (1994) and Alexander Manual Kayne Charitable Fund Community Service Internship. Established by Jody Lynn Yetzer, Class of 1994, and Manual Kayne for a student(s) who requires financial assistance to participate in an unpaid internship with a nonprofit organization.

Special Curricular Opportunities

Scholars Program

Director: scholarsdirector@union.edu

The Union Scholars Program offers selected students an enriched educational experience. The Admissions Office, in conjunction with the Director of the Scholars Program, selects the candidates for the Scholars Program. First-year Scholars participate in a once-a-week meeting in the fall term, a Scholars section of First-Year Inquiry in the winter term, and a special Scholars Research Seminar in the spring term. Sophomore year, all Scholars are required to complete a one- or two-term independent study project (one course credit) with a faculty advisor of their choosing. To graduate as a Union Scholar, a minimum of 38 credits is required. AP, IB, and transfer courses which are accepted by Union College (see "Transfer Credit Policy") may be used toward the total number of credits. Union Scholars may take

one extra course each term at no extra cost, starting in the winter term of their first year, provided they maintain the minimum 3.40 GPA for the Scholars Program. These courses can be used to accelerate graduation. Please note that Seward Interdisciplinary Fellows and students in the Law 3+3 are also members of the Scholars Program.

Seward Interdisciplinary Fellows

Director: scholarsdirector@union.edu

The Seward Interdisciplinary Fellows Program gives students an opportunity to join the Union College Scholars Program in their sophomore year and develop their own program of study exploring connections among disciplines. The program is open to students from any discipline who have demonstrated excellence in their first year at Union College. Students with at least a 3.5 grade point average after their first year are invited to apply for the Seward Fellows Program during the fall term of their sophomore year. As a part of the application process, Seward Fellows are required to design and implement a Seward Organizing Theme minor. Seward Fellows adhere to all requirements and policies of the Union College Scholars Program except that they do not have to take the first year courses associated with the Scholars Program.

Community-based learning

Community-based learning involves courses and study off campus that have a service learning or civic engagement component. Union College has developed many courses that offer students an opportunity to apply the knowledge they are learning in the classroom beyond Union's campus and in doing so both serve and learn from our community. Opportunities include courses in anthropology, biomedical engineering, economics, english, film studies, history, math, modern languages, music, political science, sociology, and visual arts that have significant community service components, along with experiences within the mini-term in New Orleans and the National Health Systems term abroad. The Kenney Community Center offers many programs that provide students with community-based opportunities beyond the classroom.

Independent Study

With the approval of a professor, a student who has shown the requisite depth of interest and the necessary intellectual skills may register for an independent study course which will allow the student to research into a specific topic that is not offered through the Union course offering. The precise form of independent study projects varies with the student and the subject; the most common are research projects in the sciences and engineering, and substantial investigative papers of "thesis" caliber in the humanities and social sciences. Appropriate credit is granted for all independent study courses that are successfully completed. Independent study courses cannot be taken Pass/Fail.

Academic Credit for Internships

Director: scholarsdirector@union.edu

Students are eligible to receive academic credit for internship experiences that are substantial in nature (clerical and other types of routine work are not appropriate). Internships that take place within the context of a full-credit course can receive pay from the relevant employer. Internships undertaken outside the context of a full-credit course must be unpaid and should involve a minimum of 100 hours of work experience. Students requesting credit for an internship must apply for credit prior to beginning their internship. Students may receive credit for up to two internship experiences, but the second internship needs to be substantially different in nature from the first in order for credit to be

granted. Students looking for help finding an internship should contact the Career Center in Becker Hall. Full guidelines and the costs of course credits are available by emailing the Director.

Cross Registration

Hudson-Mohawk Agreement (HMA)

As a member of the Hudson-Mohawk Agreement of Colleges and Universities, Union participates in programs of cross-registration permitting students to take courses at other colleges and universities.

Cross-registrations are subject to several conditions. In general, students are advised to confer with the instructor of the course proposed to be taken, and they must fulfill the prerequisites set by the institution giving the course, including permission of the instructor if that is a normal condition for entering the course. A separate Cross Registration Form (HMA), obtainable on the registrar's website, must be completed for each course. When institutional calendars do not coincide, as will be the case in most instances, the individual student will be responsible for making the necessary accommodations, including food and lodging if the home institution is closed during the course. Cross-registering students will be expected to abide by all regulations, including attendance, parking, honor systems, and the like, at the host institution.

Cross-registrations will be approved only for courses not offered at the home institution; in general, they will be limited to a maximum of half the normal course load in any one term. Further, students must have their academic advisor's permission to cross-register for the course(s) in question. Cross-registration will be permitted only in courses that Union normally would consider for transfer credit. Please note: online courses are not eligible for cross-registration.

Through the agreement, Union students may enroll in Reserve Officer Training Corps programs of the Navy and Air Force at Rensselaer Polytechnic Institute, in Troy, and in the Army ROTC program at Siena College, in Loudonville. The Reserve Officers Training Corps (ROTC) are elective programs for students who desire commissions in the armed forces. The objective is to develop professional officers who have varied educational backgrounds in major fields of interest and have the professional knowledge and standard needed for future growth. Such ROTC students may be eligible for scholarships and other benefits available under two- and three-year programs of the several services. Interested students should contact the respective branches of ROTC. Students must work the scheduling of these courses around their course work at Union College.

Select ROTC courses have been approved for cross-registration credit. These approved courses will count towards a student's graduation credits and the associated grades earned will be calculated towards the student's cumulative GPA. Other ROTC courses will be recorded along with course grades on the Union transcript; however, these will not count toward graduation requirements and their grades will not be calculated into the Union GPA. For a list of approved courses, please contact the Dean of Studies or
the Registrar's Office.

Members of the agreement, in addition to Union College, are Adirondack Community College, Albany College of Pharmacy, Clarkson University - Capital Region Center, Empire State College, Hudson Valley Community College, Maria College, Rensselaer Polytechnic Institute, The Sage Colleges, Schenectady County Community College, Siena College, Skidmore College, the State University of New York at Albany, and the State University of New York at Cobleskill.

Students with 18 or more credits toward graduation may not cross-register for courses at a two-year college without permission from the Dean of Studies.

Part-Time Undergraduate Study

Union College allows qualified students to enroll in undergraduate programs of study, on a part-time basis. The majority of these courses are taught by full-time Union College faculty and regularly enroll full-time undergraduate students. Part-time students may register for courses from these departments on a non-degree basis as well. Registration is handled for all part-time students by the Registrar's Office in Silliman Hall.

Members of UCALL and senior citizens aged 65 and over are entitled to audit one course per academic year at no tuition cost with the written permission of the instructor. Courses taken for credit by UCALL members and senior citizens will be charged the normal per course fee.

Students wishing to matriculate in a program on a part-time basis are required to meet with the appropriate department chair. Before registering for their first course, all degree seeking part-time students must complete an application form and submit it to the Registrar's Office along with a non-refundable **$25 application fee**. Application forms are available from the Registrar's website at https://www.union.edu/registrar/forms. Students intending to pursue a degree are allowed to register for up to three courses before a final decision is made on their application. Union employees, their spouses/partners/dependents are allowed to register for up to six courses before a final decision is made on their application.

Degree status is granted on the basis of transcripts from high school and/or previous college work, adequate performance in courses taken at Union College as a non-matriculated student (2.3 minimum grade point average), letters of recommendation, and a written recommendation from the departmental program advisor. Financial aid based on demonstrated need is available to matriculated part-time students. Information, assistance, and application forms for financial aid are available through the Office of Financial Aid in Grant Hall.

College credits earned at other institutions may be transferred for full or partial credit toward a Union degree if the student's advisor and the Dean of Studies certify that they are equivalent to Union's requirements. The credit value of a course must be at least three semester-hour credits or five quarter-hour credits to earn full Union course credit.

Registration for courses normally occurs during the tenth week of the term for part-time students. Course schedules are available online during the sixth week of the term. Students must register in person at the Registrar's Office and should meet with an academic advisor prior to registration. In most instances, the department chair is responsible for advising part-time students. Proof of immunization must be on file at the Health Services Office prior to registration. Continuing, part-time students may register by completing the Part-Time Registration form on our website.

Relatively few courses are offered in the evening, so matriculated part-time students will need to take most of their courses during the daytime in order to complete degree requirements. Most day time courses have restricted enrollments and in some cases, it may be necessary to obtain permission from the academic department offering the course in advance of registration. These courses, referred to as "petition courses," require the student to request a space from the department offering the course during the seventh week of the term preceding the registration period. For more information about deadlines and procedures, please refer to the current course schedule. **Refer to "Costs and Financial Aid" for the cost per course for "part-time and non-degree course fees".**

Part-time students must satisfactorily complete all requirements for their degree within 12 years after matriculating at Union. They are subject to the same program requirements as full-time students. Students intending to graduate by June of the current academic year must submit a letter of intent to the Union College Registrar's Office as per the deadline specified by the office.

Additional information about baccalaureate degree requirements, course descriptions, grading policies, and financial aid may be found elsewhere in this *Academic Catalog*.

Union University

Union College, Albany Medical College, Albany Law School, Albany College of Pharmacy, and the Dudley Observatory of the City of Albany are united and recognized by the New York State Board of Regents as "Union University." The purpose of Union University, created in 1873, is to promote learning and the development of the

component institutions in the interest of higher education while retaining and continuing the respective and distinctive organizations, rights, powers, and corporate existence. The President of Union College, David R. Harris, serves as Chancellor of Union University.

Student Life and Student Services

Student Life

Residential Life

The College's student residences include eight halls with traditional, suite and apartment style housing. They include College Park Hall (upper-class); Davidson (upper-class) and Fox (first-year) Houses, West College (first-year); College Park Apartments (upper-class); Garnet Commons (upper-class apartments); Richmond House (first-year); and Webster House (upper-class). Upper-class students also are eligible to live in Minerva Houses, Greek Housing or Theme Houses.

College Residences

Minerva Houses (2004) - Seven houses make up the student-run Minerva Houses. Up to 45 students live in each of these houses: Beuth House, Golub House, Sorum House, Wold House, Messa House, Green House, and Breazzano House.

College Park (1999) - The College Park neighborhood adjacent to campus offers apartment-style housing for 140 students, including numerous theme houses. College Park Hall, which opened in the Fall of 2004, houses 260 upper-class students.

Davidson House (1968) - Named for Carter Davidson, 13th president of the College (1946- 1965). Houses upper-class men and women in suites and men in double rooms on the lower level. Also the home of the Sigma Phi Society and the Kappa Alpha fraternity.

Edwards House (1948) - Named after theologian Jonathan Edwards, Jr., second president of Union College (1799-1801). Houses Theta Delta Chi fraternity.

Fero House (1896-97) - Named after Franklin L. Fero, Class of 1917, who financed the renovation of the building in 1990. Home of Alpha Delta Phi fraternity.

Fox House (1968) - Named for Dixon Ryan Fox, 12th president of the College (1934-1945). Houses first year men and women in suites, and men in double rooms on the lower level.

Garnet Commons (2015) - Houses 80 upper-class men and women in apartment style housing, with private bedrooms and ample common gathering space.

Hickok House (1957) - Named for Laurens P. Hickok, Union's fifth president (1866-1868). Home of the Gamma Phi Beta sorority.

North College (1814) - Used for classrooms and labs until the late 1920s, when it was converted to a residence and office building. Is now the home for Messa and Wold Houses.

Potter House (1961) - Named for Dr. Eliphalet Nott Potter, grandson of Eliphalet Nott and the seventh president of the College (1871-1884). The Chi Psi fraternity is housed on the north side of Potter and the Delta Phi Epsilon sorority is on the south side of Potter.

Raymond House (1961) - Named for Union's ninth president, Andrew Van Vranken Raymond. The Sigma Chi fraternity is in the south side and the Sigma Delta Tau sorority is on the north side of Raymond.

Richmond House (1960) - Named for Dr. Charles A. Richmond, president of Union from 1909-1928. Richmond houses first-year coed students.

South College (1814) - Oldest residence hall still in use as a residence in New York, South College was home to Chester Arthur, William Seward, and most of Union's oldest alumni. Sorum and Green Houses are located in South College.

Smith House (1894) - Named for Rev. John Blair Smith, first president of Union (1795-1799). Houses upper-class coed students in a theme house focused on supporting multicultural issues on campus.

Webster House (1920) - Named for Harrison E. Webster, Class of 1868 and president of Union from 1888 to 1894. Webster House used to serve as the Schenectady Public Library and is now a residence hall for upper-class students.

Wells House (1908) - Named for Professor William Wells, whose family lived in the house until 1930. Renovated in 1994 as a theme house that emphasizes community service.

West College (1951) - Named for the original West College, the College's first home in the Stockade area of Schenectady, West was built to house the post-World War II expansion of student enrollment. Houses first-year students as well as one of the College dining halls.

Theme Houses: Union gives students autonomy in creating the community atmosphere in which they live. The College recognizes 13 student-initiated theme houses. *ARTS House* is a home to students who seek to express themselves through the visual and performing arts. *Bronner House* is dedicated to furthering multicultural understanding among all students. *Cinematic House* is dedicated to watching, critiquing and learning about movies and cinema. *Dance House* is a community committed to expression of creativity through movement. *Dickens House* celebrates the literary mind and holds events focused on literature. *Game House* fosters a community that explores video games, board games, and sports, including games around the world. *Iris House* focuses on creating a supportive environment and educational events for issues in the gay, lesbian, bisexual, and transgender communities. *Maker House* encourages innovation, values creativity, and promotes collaborative problem solving. *Ozone House* is an environmentally-focused community designed to reduce waste and promote a more sustainable way of living. *Serenity House* promotes mindfulness, wellness, and seeks to create a refuge from everyday stressors. *Symposium House* seeks to heighten intellectual discourse outside the classroom. *Tech House* creates a space for the discussion and appreciation of technology and innovation in a social and cultural context. *Wells House* seeks to strengthen the relationship between Union and the local community through volunteer service.

Minerva Houses: Union's Minerva Houses are designed to give all students an opportunity to make rewarding connections and to blend the campus social, academic and cultural life. Every student is assigned to a house, which can be a focus for social activities, dinners and discussion, making new friends, or simply a welcoming place. Up to 45 students live in each house; all houses are equipped with a kitchen, a great room, an office, and a seminar room for meetings and classes. Non-resident members may take advantage of house gathering space and activities even though they live elsewhere. Each house has an activities budget to be used at the discretion of the membership. All faculty and some staff are affiliated with one of the houses and join in many of the house events, giving students an enriched out-of-class experience.

Fraternities and Sororities: Eight national fraternities and four national sororities and one co-ed fraternity, have chapters in good standing at Union. The Alpha chapters of six national fraternities were founded at Union, starting with the famed Union Triad - Kappa Alpha (1825), Sigma Phi Society (1827), and Delta Phi (1827)*. The others formed at the College are Psi Upsilon (1833)*, Chi Psi (1841), and Theta Delta Chi (1847). The national fraternities also include Alpha Phi Alpha Fraternity, Inc., Alpha Delta Phi, Phi Iota Alpha Fraternity, Inc. and Sigma Chi. The national sororities are Gamma Phi Beta, Sigma Delta Tau, Delta Phi Epsilon and Kappa Delta Phi National Affiliated Sorority. We also have a co-educational service fraternity, Alpha Phi Omega.

*No longer on campus.

Student Activities

Union believes that a student's life outside the classroom is an important part of their total education. The vision of Student Activities is to support and empower students in shaping their own journey, both within and beyond the classroom.

Through Student Activities, students are able to engage in unique leadership opportunities that challenge students to think critically and be empowered to take ownership for their experience.

The student government (Student Forum) funds, organizes, and supervises a variety of clubs and organizations; students are responsible for the planning and implementation of these student-funded activities with the support of the Office of Student Activities. The College requires students to have individual health insurance in effect as partial protection from the consequences of engaging in various activities and advises discretion while participating in these activities.

There are over 100 clubs and organizations that fall in the following categories; Academic Clubs, Student Governance, Club Sports, Cultural Clubs, Religious Clubs and Organizations, Art Clubs, Service Clubs and Organizations and Media Clubs. Student clubs are groups recognized by the Student Forum and funded by Student Activity fees. Student clubs must be open to all students paying the activity fee. Organizations are groups recognized by the Student Forum but not funded from Student Activity fees. Organizations may be selective as they are not funded by the Student Activity fee.

Students lead a rich array of programs and activities including but not exclusive to cultural programs, academic programs, concerts, lectures, service opportunities, and much more.

Student Activities is committed to a well-structured club sports program as an integral part of the campus community. All club sports participants are expected to comply with all program standards. As with all clubs, club sports may not host try-outs or conduct team cuts; all clubs must be open to any fee-paying, matriculated Union College undergraduate student. Club sports are categorized into competitive, recreational, and dance groups. Some competitive team sports are designated as "men's" or "women's", but are not exclusive to either gender and are open and welcoming to any students who are interested in participating.

The Office of Religious and Spiritual Life

An important and fundamental dimension of all individuals is their spiritual and ethical nature. The Office of Religious and Spiritual Life at Union is led by the Chief Diversity Officer for Student & Institutional Success & Director of Intercultural Affairs and eight other advisors who are professionals in their traditions.

It is the mission of this office to:

- Increase religious understanding across traditions.
- Engage and empower students' exploration of faith.
- Provide for worship and observance of religious holidays.
- Provide opportunities for community service that integrates religious understanding with action.
- Offer pastoral counseling and spiritual direction.
- Develop and nurture student leadership skills.
- Offer a religious perspective to the academic community.
- Support the mission of the College.
- Foster interfaith dialogues.

The Office of Intercultural Affairs

At Union, we appreciate and value the richness of diversity that our students, faculty and staff bring to our community. We believe our cultures, worldviews, experiences and identities can enrich our campus community as a whole, and that we can learn from each other through our differences and similarities. Led by the Chief Diversity Officer for Student & Institutional Success & Director of Intercultural Affairs, the Office of Intercultural Affairs aims to:

- Enhance cross-cultural understanding across cultural differences through purposeful programs and dialogues.
- Provide opportunities for students, faculty and staff to engage and learn from each other
- Challenge our Union community members to serve as active allies and change agents
- Promote an inclusive and equitable learning environment for all
- Develop students' inclusive leadership skills
- Support and mentor underrepresented student populations
- Collaborate with campus partners in support of the mission of Union College

Athletics

The College believes that every student should be encouraged to take part in sports activities at a level commensurate with their interest. Each student should be able to improve skills and learn new sports and activities that will carry over later in their lives. Thus, Union offers an extensive program of intercollegiate, intramural, club, and recreational sports, along with a wellness program that provides students, faculty and staff the opportunity to learn the skills of lifetime sports while promoting healthy lifestyles. The College ensures that athletics are kept in harmony with the essential educational purpose of Union. Union College student-athletes, like those engaged in all extracurricular activities, are an integral part of the campus community and are students first.

Intercollegiate competition is offered in 26 sports: for men, in baseball, basketball, crew, cross-country, football, ice hockey, lacrosse, soccer, swimming, tennis, and indoor and outdoor track; and for women, in basketball, crew, cross-country, field hockey, golf, ice hockey, lacrosse, soccer, softball, swimming, tennis, indoor and outdoor track, and volleyball. Union is a member of the National Collegiate Athletic Association (NCAA), the Eastern College Athletic Conference Hockey League (ECAC Hockey), and the Liberty League. Men's and women's ice hockey compete at the NCAA Division I level; all other sports compete at the NCAA Division III level.

In addition to intercollegiate athletics, the college offers a broad club sports program administered through the Student Activities office. An extensive intramural program in a wide range of sports is also offered, along with noncredit wellness/activity classes as part of the wellness program.

Facilities include Messa Rink at Achilles Center (hockey, recreational skating, and intramurals as well as locker rooms and athletic training facilities); Viniar Athletic Center, (basketball and volleyball); Frank Bailey Field, at Bertagna - Class of 1985 Stadium, multipurpose, all-weather, lighted field with a 400-meter track, stadium seating for 1,500 and press box (field hockey, football, lacrosse, outdoor track, and intramurals); Breazzano Fitness Center at Alumni Gymnasium (fitness center, swimming, racquetball, squash, golf simulator, rowing tanks, a large exercise room and athletics administration and coaches' offices); Garis Field (outdoor track - field events, club sports); College Park Field, a multipurpose, all-weather, lighted field (soccer, intramurals and club sports); College Boathouse (crew); Memorial Field House (intramurals, recreation, indoor track, indoor facility for tennis and spring sports, locker rooms); Alexander Field (softball); Travis J. Clark Strength and Conditioning Center (varsity strength training) and eight outdoor tennis courts and an outdoor basketball/street hockey court, all used for intercollegiate competition, intramurals, clubs and open recreation. Women's Golf competes at the Mohawk Golf Club in Niskayuna and Baseball competes at Central Park in Schenectady.

Student Services

Campus Safety

Union College is committed to assisting all members of the Union College community in providing for their own safety and security. Campus Safety main business office is located at the Williams Center for Campus Community Safety (645 Nott St.). Parking permits, vehicle registration, and ID card services are in the front lobby of College Park Hall.

Important Phone Numbers:
Emergency: 911
Non-Emergency: (518) 388-6911
Escort Service: (518) 388-6386

Union College's Campus Safety Department provides 24-hour, year-round security and safety programs. Members of the department are employees of the College who report to the Director of Campus Safety. Officers work eight-hour shifts to perform their duties, which include:

- Preventive patrol of grounds and buildings
- Emergency medical assistance
- Incident investigation and reporting
- Hazard control
- Crime prevention
- Parking and traffic management
- Emergency Management and Training

Special services, escorts, transports including lockout assistance, noise and nuisance control, security escorts, lost and found, and other needs associated with quality of life, safety, and security.

Members of the department have portable radios and are centrally dispatched by control operators in the Campus Safety Building who monitor telephone and emergency lines as well as fire and security alarms. Every College building is linked to the Control Center for fire alarm monitoring, video surveillance and a number of buildings have security alarm systems and access control.

The Campus Safety Department is a private security force empowered by the College and the State of New York to enforce its rules, regulations, policies and the laws of the State of New York. Enforcement procedures include issuing parking tickets, issuing summary fines, filing conduct charges, and making arrests.

The Campus Safety Department works closely with federal, state, county, and local authorities in the investigation and prosecution of crimes and in fire, safety, and health-related issues.

Information regarding campus security and personal safety including topics such as, crime prevention, Campus Safety law enforcement authority, crime reporting policies, crime statistics for the most recent three year period, and disciplinary procedures is available from the Director of Campus. Access to crime data reported to the U.S. Department of Education may be found through the following Web site:

http://www.union.edu/offices/safety/reports/clery/.

Counseling

The Counseling Center provides services for students to address personal/psychological concerns with a licensed professional counselor. Typical concerns of students range from interpersonal issues, family concerns, academic problems, etc., to problems such as anxiety, depression, and addictions. Most students are seen in individual counseling sessions. Group and couples sessions are arranged when appropriate. All communications with the Counseling Center are confidential. All Counseling Center services are free of charge for enrolled undergraduate students. The Counseling Center also collaborates with Health Services in regards to psychotropic medication.

International Advising Office

The International Student Advising Office supports the international student and scholar community studying at Union on F1 and J1 visas. The office advises students and scholars on maintaining compliance with U.S. immigration laws and regulations related to their student visas. In addition, the office processes DS-2019s, I-20s, travel signatures, and letters needed for travel, employment, maintaining status, social security numbers, and other immigration related matters. International Advising supports students and scholars through the adjustment to American culture and studying in the U.S., while helping them maximize immigration benefits and make the most of their experience. International Advising also works closely with campus partners to connect students and scholars to resources and support necessary for their success at Union.

Please contact the International Advising Office at internationaladvising@union.edu or 518-388-8003.

Disability Services Office

The Disability Services Office is committed to providing students with disabilities equal opportunities to benefit from all services, programs, and activities offered. We are in compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act. The Director determines eligibility for services, authorizes appropriate academic accommodations, assists faculty with regard to disability, issues and questions, and helps assist students with self-advocacy in locating additional resources on or off campus.

Please contact Laura Galt, Director of Disability Services Office, at (518) 388-8785 should you have any questions.

Health Services

We are staffed with 2 Nurse Practitioners, a Physician's Assistant, 5 Registered Nurses, 2 Administrative Assistants, an Office Manager, and a collaborating physician. We have a dietitian on site 1.5 days a week, and a Psychiatric Nurse Practitioner on site 3 days a week. Our hours are Monday - Friday from 8:30 AM to 5 PM. We are closed on weekends. Local hospitals and urgent care facilities are available nearby for emergencies after hours with transportation provided by campus safety. Visits are by appointment only. There is no charge to be seen at the Health Center. We offer immunizations, blood draws, and various in house laboratory tests. We have a formulary of medications on site for a nominal fee. Charges for medications, x-rays, laboratory procedures, hospital visits, or specialists are the direct responsibility of each student. We are unable to honor insurance prescription cards for medications dispensed at Health Services. Lange's Pharmacy delivers to Health Services daily, Monday- Friday. If you would like to have your prescription card and a credit card registered with Lange's, please call (518) 374-3324 or use this form to register https://langespharmacy.com/. If you have a concern about the school health insurance plan, please contact the Bursar's Office bursar@union.edu or at (518) 388-6106. Information about coverage can be found at https://www.haylor.com/college/union-college/.

Please refer to our immunization policy in the student handbook. Students requesting religious or medical exemptions should submit a letter according to the Dept. of Health regulation 10NYCRR, Section 66.13 (d). This consists of either: 1. a certificate from a physician, licensed to practice medicine in this State, that one or more of the required immunizations may be detrimental to the student's health. This certificate must specify which immunizations may be detrimental, or 2. A written and signed statement from the student, stating that they object immunization due to sincere and genuine religious beliefs which prohibit the immunization. All health forms are available on our website at: https://www.union.edu/health-services/incoming-student-health-forms

Career Center in Becker Hall

The Career Center is committed to teaching students how to develop and achieve their career goals so that they are able to secure opportunities that invoke their passion and manage their career for a lifetime in a dynamic, diverse, and global environment. The Career Center empowers students to take personal responsibility for shaping their future. This is

accomplished by encouraging self-assessment, exploration and reflection, providing opportunities to apply learning and begin careers, educating students about the world of work, and providing resources to advance students through all phases of their career development.

Students are encouraged to take advantage of the Career Center during all four college years. A recommended first step is to learn about oneself by engaging in all aspects of college life including academics, student organizations, activities, and events. As students reflect upon these and other life experiences, their interests, values, and skills will become increasingly apparent and begin to serve as a foundation for developing their career plans.

Career Center staff helps students develop five core career competencies: Career Decision Making (including self-assessment, exploration, and reflection), Resume Writing, Cover Letter Writing, Interviewing, and Networking. By mastering these competencies, students equip themselves with the lifetime ability of finding and securing positions for which they are well suited. Programs are designed to facilitate student growth in these areas and prepare students to find and connect with opportunities and graduate school programs consistent with their interests. In addition, the Career Center houses a number of online career research tools that allow students to research potential career fields, locate employers by industry and/or geographic area, and connect with Union College alumni working in their targeted career fields. Handshake, the Career Center's web based database, provides students with access to internship and job opportunities from employers specifically looking to hire Union College students.

For more information visit http://www.union.edu/offices/career/, or call (518) 388-6176.

Catalog Home

The Union College Academic Catalog describes the College's academic program, including the Common Curriculum and individual department and program majors, minors, and course offerings, as well as academic policies and regulations. The Academic Catalog also contains information about Union College, including life on campus as well as costs and financial aid.

Accessing the On-line Academic Catalog

This is the home page for the Online Academic Catalog, which provides the most up-to-date information about courses and programs. You can access sections of the Academic Catalog using the navigational tabs to the right. For example, for requirements of particular majors and minors, click on "Majors, Minors and other Programs" and for information about particular courses, click on "Course Listing."

Downloading the Academic Catalog

A PDF version of the catalog will be available for download on October 1, 2024. **PLEASE NOTE THAT THE MOST UP TO DATE INFORMATION IS IN THE ONLINE VERSION.**

The information in this Academic Catalog was prepared as of August 1, 2024. Provisions of this publication are not to be regarded as an irrevocable contract between the student and Union College. The College reserves the right to make changes in its course offerings, degree requirements, regulations and procedures, and fees and expenses as educational and financial considerations require.

Union College does not discriminate on the basis of age, sex, race, color, religious belief, disability, sexual orientation, or national origin. The College's policy of nondiscrimination extends to all areas of college operations, including but not limited to admissions, student aid, athletics, employment, and educational programs. All the rights, privileges, programs, and activities generally accorded to all full-time matriculated students of the College are accorded on a nondiscriminatory basis.

Archived Catalogs

Downloading the Academic Catalog:

You can download the Academic Catalog in a pdf document. PLEASE NOTE that the most up to date information is in the online version for the current Academic Year.

Union College 2021-2022 Academic Catalog

Union College 2020-2021 Academic Catalog

Union College 2019-2020 Academic Catalog

Union College 2018-2019 Academic Catalog

Union College 2017-2018 Academic Catalog

Union College 2016-2017 Academic Catalog

Union College 2015-2016 Academic Catalog

Union College 2014-2015 Academic Register

Union College 2013-2014 Academic Register

Union College 2012-2013 Academic Register

Union College 2011-2012 Academic Register

Union College 2010-2011 Academic Register

Union College 2009-2010 Academic Register

Union College 2008-2009 Academic Register

Union College 2007-2008 Academic Register

Union College 2006-2007 Academic Register

Complex Questions: Global Challenges & Social Justice Curriculum

Complex Questions: Global Challenges & Social Justice Curriculum

Director: Professor Judith Lewin (English), education@union.edu

The **Complex Questions** curriculum at Union College combines the breadth and strengths of a traditional liberal arts education to enhance teaching and learning through the diverse perspectives of major areas of human understanding. Driven by our longstanding college-wide commitment to lifelong learning with social purpose, the curriculum creates opportunities for students to engage with and develop an understanding of the complexity and global nature of many issues and how different disciplinary perspectives address and explain those issues.

Students will take nine courses, including eight* courses that thread themes of two major Areas of Inquiry - **Justice, Equity, Identity, and Difference** (JEID), alongside various **Global Challenges** (GC) - through diverse liberal arts

perspectives. All perspectives courses will incorporate one of the Areas of Inquiry. Students may satisfy any of the requirements except FYI/FYI-H and WAC (Writing Across the Curriculum) with appropriate courses taken on campus or international programs. Courses other than FYI/FYI-H may be used to meet the requirements of a major or minor unless specifically prohibited by a particular program or department. Academic policies and administrative procedures for the Complex Questions Curriculum can be found in the Complex Questions Curriculum Advising Guide located in the Resources Section of the Complex Questions: Global Challenges and Social Justice website. Advisers and students should study the information carefully.

*As the Complex Questions curriculum is phased in, students entering in the Fall of 2022 and Fall 2023 will only be required to take six Perspectives courses and students entering in the Fall of 2024 will only be required to take seven Perspective courses. However, Union College strongly recommends that students take courses in all eight Perspectives.

Courses that Builds Intellectual Foundations

First-Year Inquiry (FYI 100) is taken during the first year and engages students in the exploration of ideas and diverse perspectives through critical reading, thinking, and writing. These courses are designed to introduce critical inquiry across the disciplines at Union, with a focus on open-ended questions. Note that students in the Scholars Program take Scholars Inquiry (FYI 100H).

Courses that Explore Perspectives Across Areas of Inquiry

A student must take one course from each of the eight Perspectives, with at least one course taken in each Area of Inquiry.

Creative Works/Arts and Design (CAD) are courses where students experience and engage critically with the creative arts around an area of inquiry in a historical or contemporary context. Such courses enable students to develop and cultivate a sensory and/or experiential literacy that will refine their ability to be active, critical thinkers rather than passive spectators.

Cultural and Historical Foundations (CHF) are courses where students will learn to recognize change and continuity in patterns of beliefs, practices, and policies in the present and/or over time that inform the organization of communities, societies, and nations, as well as the cultural identities of individuals. Such courses may compare/contrast human experiences around the Areas of Inquiry across and/or within national boundaries.

Data and Quantitative Reasoning (DQR) are courses that introduce students to mathematical, statistical, or computational methods for reasoning with data or quantitative analysis. Students will identify and construct questions, apply appropriate methods to investigate questions, and develop skills to engage societal problems or global challenges.

Engineering, Technology and Society (ETS) are courses where students engage with the engineering design or software development practices and ways of thinking to understand how technology is and has been used to address complex problems. Courses consider how technological innovation can both deliberately and accidentally disrupt economies, cultures, politics and relationships, while engaging with difficult moral and ethical questions.

Literatures (LIT) are courses where students experience and study literary texts, which can include, but are not limited to, fiction, non-fiction, poetry, drama, and film. Courses will explore the relevant imaginative, historical, philosophical, and related aesthetic forms and contexts of literary works.

Natural and Physical Sciences (NPS) are courses where students will be immersed in hands-on, inquiry based learning of scientific principles and processes through laboratory or field exercises. Courses will be grounded in the knowledge and understanding of the world around us, how science can shape society, and how natural processes can be perturbed by human influence or activity.

Social Analysis, Politics and Ethics (SPE) are courses where students will learn about the methods and/or theories of social, political, and/or ethical and moral inquiry in order to develop critical thought about and analyze issues of justice, equity, and difference, as well as a myriad of other global challenges faced by society. A course may describe how

different perspectives might engage with or help develop new ways of thinking about ethical dilemmas, environmental and social problems, and consider the ramifications of alternative solutions.

World Languages (WOL) are courses where students study and use a world language other than English, as systems of communications for expressing aspects of human experience. Courses will afford students experience with and exposure to languages beyond their own to facilitate communication, cultural competency, historical understanding, and meaningful participation in multilingual communities at home and around the world. In order to understand and engage with global questions, we need exposure to languages beyond our own as they offer perspectives that become clear only n the vocabulary, expressions and thought patterns of those languages and the people who use them. Courses in languages other than English taken abroad will also count for this requirement.

Catalog Home

Welcome to Your Online Catalog

This is a default front page for your catalog. You can customize this page within the Acalog ACMS™.